Organisations and the sixth wave: Are ethics transforming our economies in the coming decades?

Sofi Kurki *, Markku Wilenius

Finland Futures Research Centre, University of Turku, Korkeavuorenkatu 25 A 2, FI-00150 Helsinki, Finland

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ABSTRACT

The Kondratieff wave theory describes how societies develop in socio-economic waves of 40–60 years. The theory postulates a set of technologies and practices that are unique to each wave. Although a challenge of the Kondratieff wave theory is great variance in interpretations about the timing of the waves among scholars, based on several analyses we suggest that with the financial crisis of 2008, and resulting economic instability, we are experiencing the end of the fifth wave and the emergence of the sixth.

We take as our starting point the global trends, particularly those of scarcity and the rising cost of commodities such as energy and raw materials that have led to a widely shared hypothesis that resource productivity will be the key driver of technology and economic growth in the next wave. Socially, this driver will be fortified by growing environmental concerns since climate change and the destruction of natural ecosystems seem inevitably to proceed. Both these sources are boosting a generation of new companies and behaviour.

In this article our focus is to evaluate weak signals that point to possible directions for the future of organisational practices in the sixth Kondratieff wave. We ask what will be the effects of the changing socio-technical landscape on the working life and organisational culture. The K-waves theory explains how certain ways of organising that have so far developed in the fringes of organisational culture may move into the mainstream, as a product of the systemic restructuring that has often accompanied the new K-wave.

We present our findings from a workshop with representatives of five different resource efficiency oriented organisations in the Silicon Valley area. Based on the data we have gathered through the workshop and complementing interviews, we show how organisations base their considerations about the future to a surprisingly large extent on ethical arguments. Our material also includes a case that shows that this ethical approach is not self-evidently related to the aim for resource efficiency.

We evaluate our results in the Future Sign – framework presented by Hiltunen. The signals we have gathered are combined with corporate shared value – thinking, and both are interpreted through the Kondratieff – wave theory. Based on our sample of five cases, along with a framework that supports our interpretation, we suggest the ethical motivations as backbone of organisations is a relatively strong future sign that has potential for strengthening in the sixth wave context.

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* Corresponding author. Tel.: +358 408351142.
  E-mail addresses: Sofi.Kurki@utu.fi (S. Kurki), Markku.Wilenius@utu.fi (M. Wilenius).

1. Introduction: Kondratieff waves as a framework for understanding socio-economic change

The theory of long waves, as first formulated by Russian economist Nikolai Kondratieff at the beginning of the 20th century, analyses the socio-economic development of societies as a succession of long-term macro-economic fluctuations of 40–60 years that build upon each other (Kondratieff, 1928/1984). Although originally the work on the long waves and long-term patterns has been focused on looking at economic indicators, the emphasis of research has been moving towards understanding the long-term fluctuations in economies and societies as a more holistic process.

In the Schumpeterian wing of Kondratieff studies, the waves are explained in evolutionary terms where new innovation and creative destruction are the main reasons for long wave fluctuations (Modelski, 2001). In this framework, Ayres (Ayres, 1990a, 1990b) has suggested that the key technologies of a certain wave develop in latency during the previous waves, and come to fruition as the new wave reorganises the society in a way that can take advantage of the new technology. The suggestion is that societal practices and technology develop in a co-evolutionary pattern that shapes the contents of the rising wave. The Kondratieff-Schumpeter explanation of the co-evolution has this far been seen as a process, where new technology and corresponding societal practices respond to technological, ecological and societal pressures (Modelski, 2001).

Carlota Perez has advocated a theory where economic history can be best understood as a succession of separate techno-economic paradigms, where long-term growth is driven by a key general-purpose technology. The "slowness" of the long-waves comes from the inertia that the new disruptive technology first faces with the previous techno-economic paradigm, and the powers and interests that relate to it. Only gradually, through conflict and the realisation of a new competitive advantage, an alignment of the new technology and corresponding societal institutions forms the new socio-technical paradigm of the new wave (Perez, 1983).

Other examples of complementary approaches to the long waves include linking the phenomenon with generations-research (Dator, 1999, 2006; Linstone, 2006; Mensch, 2006; Nefiodow, 2006; Serra, 2006), finding long-wave cyclicity in other fields of human activity (Marchetti, 1986), understanding historical developments using population ecology models (Turchin, 2003) or connecting long-term waves and leadership (Wilenius, 2014).

One of the major challenges in applying the theory in practice comes from the lack of consensus among scholars regarding the chronology of the waves (Dator, 1999). Our view of the timing of the waves is based on previous analysis (Korotayev & Tsirel, 2010; Moody & Nogrady, 2010; The Sixth Kondratieff, 2010) supporting an interpretation where the financial crisis of 2008, and the tumultuous years since then can be seen as symptomatic of the final phase of the fifth K-wave, and start of the transformation period that will ultimately bring about a growth phase of the sixth wave.

1.1. Ecological limits and ICT as the key drivers of the sixth wave

The context in which the next 40–60 years will unfold will to a large extent be defined by limits on available natural resources combined with a larger number of consumers from the emerging markets. These together will make basic commodities needed in industrial production increasingly scarce, and this is already reflected in the prices they draw in the world market (McKinsey Global Institute, 2011). The first decade of this century showed unprecedented growth of key commodity prices. Moreover, rapid environmental degradation in terms of pollution, deforestation, the loss of biodiversity, overfishing and other environmental hazards have proceeded to a level where scientist have warned of ecosystemic collapses in the very near future (Barnosky et al., 2012).

All our earthly resources have experienced very heavy use in recent decades. Between 1980 and 2008, global resource extraction and use increased by 78%, from 38 billion tonnes to more than 68 billion tonnes. The number could rise to 100 billion tonnes in just 20 years. Simultaneously, there is an estimate that the biocapacity of the earth (including both extraction and absorptive capacity for waste and emission) has already been exceeded by 50% (Eco-Innovation Observatory, 2012).

Ever since the latest phase of globalisation, which took effect by the turn of the millennium when China and India fully entered the global markets, there has been a very strong increase in demand. With rising demand and the difficulties of matching it with supply comes price volatility, which has plagued resource markets for the last decade (McKinsey Global Institute, 2011). All this recent evidence suggests we are entering a new phase of global economic development, one in which the way we use our resources has a much more fundamental bearing on everything that we do. From the private sector, this calls for radical innovations and new business models.

McKinsey has estimated that USD 900 billion in investments is needed to meet productivity demands (McKinsey Global Institute, 2011). On the other hand, this could also create between nine and 25 million jobs. In addition, the investment would help stabilise resource price volatility that would in turn encourage investment and lead to a new wave of systemic innovations.

Due to these grave challenges, some scholars have suggested that the environmental pressures will most likely be the main drivers of the next wave of economic growth by directing the use of technologies in a novel way (Wilenius and Kurki, 2012; Moody & Nogrady, 2010; von Weizsäcker, Hargroves, Smith, Desha, & Stasinopoulos, 2010).

ICT infrastructure that developed during the fifth wave will in the sixth wave be the most important enabler for new kinds of resource efficient technologies. The communications revolution, which marked development during the decades of the fifth wave from the 1970s onwards, will somehow need to be transformed into a resource revolution.

In this article we take as our starting point the major social, technological, and ecological drivers impacting the sixth wave context, and ask, what will be the effects of the changing landscape on the working life and organisational culture?

1.2. ICT and the societal mindset change as background for the next wave

The fifth wave was defined by ICT as the key technology (Perez, 2002). Since the 1970s, economic growth has greatly benefited from advances in computing power and the spread of information technology. However, along with this technology driver there have also been important and unprecedented developments in the social sphere as marked growth in awareness of environmental and ethical challenges in a globalising world, particularly the wake-up call provided by Club of Rome (Meadows, Meadows, Randers, & Behrens, 1972).

Towards the end of the fifth wave, ethics in business were mainly manifested through the Corporate Social Responsibility (CSR) movement. This can be summarised as aiming at improving the lot of external stakeholders by voluntary costs inflicted on the businesses by themselves (Holme & Watts, 2000). Although criticised from various angles, from interfering with business objectives to acting as mere window dressing (Henderson, 2001). CSR has been at the core of the development of self-reflection within the business community about the consequences of their actions on the wider world. It is a well established and very much a viable model for the promotion of ethics in corporations also in the future.

Over the course of the last five years, a number of large global companies, have begun to embrace a more utilitarian approach to ethics, incorporated in the idea of shared value (CSV), where social or ecological problems can be turned into business goals, thus matching the two ends that have not been seen as commensurate.

The CSV model was put forward by Michael Porter and Mark Kramer in their seminal article in the Harvard Business Review (Porter & Kramer, 2006). They suggested that shared value to be the key driver for the next wave of innovation and productivity growth in the global economy. In a nutshell, the shared value thinking goes out from the idea that social responsibility is in the self-interest of businesses, as it provides them with better quality products, more productive employees and more loyal customers.

Examples of this approach include GE, which launched its' Ecomagination initiative – innovating a new series of technologies, products and services – that would all address the radical increase of energy and resource efficiency. By 2014, they have already reached 160 billion US dollars in revenues and 12 billion R&D investments for their products and services (Anonymous, 2014a). Also IBM has already for a long time seen sustainability as being at the core of their strategy. In their "Smarter Planet" initiative they are – among other things – helping to build resource-wise cities of tomorrow (Anonymous, 2014b). Google has spent over 1 billion euro on renewable energy projects (Anonymous, 2014c). These examples, among others, show a shift in mainstream business towards resource efficiency.

The CSV approach can be interpreted as stemming from broadening the future horizon the companies are considering in their business decisions: Mark Kramer argues that undervaluing the ecological and societal environment, and squandering natural resources is inevitably self-destructive from the point of view of the company if it takes a long-view perspective to its own future. What Kramer calls a "Porterian" argument to sustainability thus might be that the perceived mismatch between the market and sustainability is not fundamental, but stems from misunderstood capitalism, inefficient management, as well as from insufficient participation by the society and the governments, who ultimately shape the rules corporations apply (Kramer, 2012).

There are two further arguments that point to a growing importance of more socially inclusive trends in organisational management in the coming K-wave.

First, the general public's trust in businesses is low, as the latest worldwide Edelman's Trust barometer 2013 shows: only 18% of the general public believe that business leaders tell the truth, regardless of how complex or unpopular the truth is. Interestingly, levels of trust are far lower in developed countries. Business leaders are blamed for optimising short-term financial performance while overlooking the most important customer needs and ignoring the longer-term impacts of their activities (Edelman's Trust Barometer, 2013).

Second, we still predominantly live in a society and a value-climate that supports companies being exclusively interested in making shareholders happy by creating maximum profits. Thus, companies need to demonstrate that they are genuinely interested in their impact on society. CSR schemes are not necessarily enough to remedy this. By applying the principle of shared value, which means creating economic value in a way that also creates value for society by addressing its needs and challenges, creates a situation where a company's success is intimately connected to social and/or environmental progress. The starting point is thus to identify all the societal needs, benefits and harms that are or could be embodied in the company's products. This scrutiny will lead businesses to rethink some of the opportunities that they have previously dismissed in terms of services and partnerships.

When discussing the potential sixth wave organisational directions, it must be noted that CSR and CSV both assume an operational environment that in many ways resembles the current logic of the markets. However, there are several different ways things can play out over the course of the next few decades. Illustrative of such options is the socio-economic paradox of the coincidence of widening income differences, with an apparent shift of power to individuals through the decentralisation of communications and energy production since the early 2000s (Rifkin, 2012). This discrepancy, and the alternative ways societies can respond to it, will have significant societal consequences that will influence the shaping of the next wave (Wilkinson & Pickett, 2010).

One of the central challenges that affect the future of societies and therefore organisations is the change in how wealth accumulates through digital business models, and how in turn societies choose to address this change by creating alternative mechanisms for wealth distribution. In an age when productivity differences between individuals are likely to operate on a logarithmic scale, and where increasingly even skilled labour can be replaced by sophisticated automation, disruption of the traditional model of paid labour as the main mechanism for wealth distribution needs to be considered as a serious alternative (Arthur, 2011; Brynjolfsson & McAfee, 2011).

Jaron Lanier, a central societal thinker of the information age sees the deterioration of the middle-classes as the most worrying effect of the digitalisation of business (Lanier, 2013). Regrettably, only the surface of the phenomenon of jobless growth has been scratched in societal discussion. However, there are signals that small businesses (in part, but also non-profits and networks of volunteers) are already preparing for a very different kind of world, where instead of continued wide-spread prosperity and agency through consumption, the emphasis needs to be on societal resilience and survival. These counter-measures include new forms of barter that employ surplus goods and time to create communities of sharing. There are also seeds of a micro-payment model advanced by Lanier, which would give Internet users compensation for the contents that they produce (and what the large corporations are building their profits on) (Lanier, 2013).

1.3. The aim of the study

In what follows we present weak signals regarding the organisational futures gathered from a workshop organised in December 2012 with representatives of five different resource efficiency oriented organisations and businesses in the Silicon Valley area.

Using the Kondratieff wave theory as an interpretational framework, we seek to understand the possible directions that organisational practices may develop towards in the sixth wave.

In order to evaluate the relevance of our findings for the sixth wave, we use the triadic model of a future sign developed by Hiltunen (2008) which allows us to assess the strength of the future signs the presented weak signals are a part of.

A future sign is a concept based on Peircean semiotics, developed by Hiltunen (2008) for making sense of weak signals. The triadic model of a future sign captures three relevant aspects of change: *the signal* (instances of change that can be observed, here views of the representatives of case organisations, and supporting theory), *issue* (the real life change taking place), and observer's *interpretation* (our understanding of the relevance of the case examples, interpreted in the Kondratieff wave framework).

1.4. The case examples

In our workshop we discussed the future of resource efficiency in organisations, with representatives of five organisations from the Silicon Valley area that each had a specific way of responding to the resource efficiency issues. The aim of the workshop was to find weak signals about the resource efficient sixth wave.[1]

We selected organisations based on a criterion that resource efficiency is at the centre of their operations. The organisations were selected to the study by a form of snowball sampling, where we asked our informants at the Institute for the Future to point out from their networks organisations that are active in our area of interest, resource efficient production. The organisations *were not selected based on their approach to social issues, or ethics*, as the main theme of our research interest at the workshop was the resource efficient ways of operating.

The organisations we studied were:

Give Something Back (GSB), an office supplies company. It sells regular office supplies to its customers who appreciate the low prices and good service. GSB was founded in 1991, inspired by Newman's Own, a food company that donates its profits to social causes. GSB approaches the marketplace as an effective mechanism for spreading wealth, and uses it to advance societal well-being by donating on average 75% of its net earnings to local non-profits in the communities where it operates. Each year, customers have the possibility to vote for the groups that will receive donations from GSB. During its tenure of 23 years, GSB has donated 5 million dollars to charity causes (Anonymous, 2014d).

The mission of New Leaf Paper (NLP) is to be the leading source for environmentally responsible, economically sound paper. NLP was founded in 1998 with the specific goal to change the paper industry from within. The founders had concluded that as the paper industry is one of the most polluting and resource intensive industries in the world, and it had demonstrated a high resistance to change, the change should come from new actors in the field who did things differently.

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[1] As we are drawing inferences from our case organisations for the sixth wave, it needs to be noted that the organisations we studied are not all novel, but for example the GSB has been in operation for 23 years, and NLP 16 years. This as such is not contrary to the K-waves theory. The Kondratieff waves theory (especially the Schumpeterian interpretation, e.g. (Ayres, 1990a, 1990b)) explains how certain technologies, or ways of organising that have so far developed in the fringes of organisational culture may move into the mainstream, as a product of the systemic restructuring that has often accompanied the new K-wave. This same idea (although in different purpose) of a certain window of opportunity that is opened by The K-waves theory explains how certain ways of organising that have so far developed in the fringes of organisational culture may move into the mainstream, as a product of the systemic restructuring that has often accompanied the new K-wave. restructuring on the regime level has been raised also in the Transition Management school (e.g.(Grin et al., 2010)) (and even before by the Annalists school in history (Braudel, 1996)).

The goal of NLP is to inspire – through its success – a fundamental shift towards environmental responsibility in the paper industry. NLP has achieved success through introducing the first 100% quality post-consumer papers to markets, including coated papers, book publishing papers and more. The successes have inspired change in their competitors, serving the company's greater mission to have a significant environmental impact (Anonymous, 2014e).

Shareable provides a platform for its customers for sharing ideas, things and labour, and publishes a magazine directed at the community of sharers. It taps into the emerging culture of sharing, an ancient phenomenon revitalised by the possibilities of the digital age, which has helped turn an age-old community practice into a profitable business model. This "sharing economy" means that businesses are increasingly being built on the sharing of resources: customers have access to goods when they need them. Other notable examples of the sharing economy are new ventures such as the apartment rental platform Airbnb, or the car sharing initiative Zipcar. As examples of how to do business with sharing abound, the growing legitimacy is reflected in the more polished terms used to describe the phenomenon like peer-to-peer (P2P) networks, collaborative consumption or the access economy. Although most examples of the sharing economy see sharing as the next stage of the capitalist economy, Shareable sees it as a part of its mission to evoke discussion on the future of the economy (Anonymous, 2014f).

The Amazon Mechanical Turk (AMT) is based on an idea that there is a class of "human intelligence tasks", things that computers are currently not able to do (classifying, tagging and rating photographs, transcribing podcasts, etc.) that have a certain market value, but that value is below the cost of hiring a full-time employee to perform them. AMT provides a solution to this by running a platform for posting microtasks: small tasks of work that pay very little but enable the hiring of labour for work that would not otherwise get done. In the microtasking environment, "Requesters" post a job and choose the best "Worker" by qualifications or a test task. The typical jobs offered in AMT are to rewrite sentences, paragraphs, or whole articles, and these have rewards ranging typically from one cent to ten dollars (Anonymous, 2014g).

The VineStove is at the outset a similar microtasking platform to AMT, but it differs in that it is based on donating labour for a charity cause. It combines volunteering and fundraising in one. There are two ways to participate: to perform tasks to earn money for charities and to pay something to get a task done, and the money goes to a charity. It is thus an interesting hybrid between old-school CSR and the latest form of labour productivity initiative (Anonymous, 2014h).

2. Results

The research material was collected as a group interview at a workshop arranged by Finland Futures Research Centre and the Institute for the Future (IFTF) at IFTF headquarters in Palo Alto on 10 December 2012. The material was complemented with additional interviews held in May 2013.[2]

The aim of the workshop was to discuss the companies' approaches to resource efficiency, and about how they see the future of their businesses in general.

The workshop was divided into three themes:

(1) *The Why: Personal and Organisational Motivations*, where the participants talked about the inspiration behind their personal and/or organisational approach to resource use.
(2) *The How: Examples of Practical Innovation*, which concentrated on practices, innovations, and business models that participant organisations employ in their work.
(3) *The Future: Barriers and Opportunities Five Years Out* was targeted at finding ideas about future possibilities and obstacles on a five-year timescale.

The workshops were recorded, and transcribed first on a level of topics, then in more detail for the purpose of presenting the quotations about specific themes.

Other materials used in the analysis are the organisations' web pages that have provided more information about the history of the organisations. These have been used in developing understanding about the organisations (Table 1).

In the following chapters we present the results of the workshop in the order they emerged.

2.1. The why: personal and organisational motivations

The first session was about the inspiration behind the participants' personal and/or organisational approach to resource use. What drives the organisation to create an alternative to traditional methods of productivity, either in the value chain, the labour force, consumption or business models?

A common storyline was that the founder of the company had gained expertise in a given field, and through that expertise combined with a personal motivational driver, was able to identify a specific problem or a gap in the existing system. Mending that gap provided both a way to improve some aspect of the status quo, and a viable business idea. The success of the company was often similarly viewed as resulting from being able to tap into an ongoing stream of social change.

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[2] Complementary interviews were conducted with representatives of GSB and Shareable, because of all the cases these two most strongly based their activities on strong ethical arguments, and the interviews were made to deepen the understanding of their motivations.

Table 1
The materials used in the analysis.

Material source	Material type	How used
Workshop	Recordings, transcriptions (preliminary analysis based on topics discussed, word-to-word transcription for quotations).	The main source of analysis and argumentation in the article.
Interviews	Transcribed quotations	Additional information about the most value oriented organisations' motivations (Shareable, GSB)
Web pages	Text	Background information, history.

> The business model and the ethical outcome are the important things, not the products (GSB).

> Shareable catalyses the huge sharing movement that is going on (Shareable).

Several informants shared the notion that institutional momentum building on organisational culture, investments, and other such path-dependent developments make it very difficult for change to come within industries. Outsider entrepreneurs, such as the early CSR pioneers, who often did not come from a business background, were seen as the only way to change practices and culture. In our cases these were represented by GSB and NLP, who work specifically to change an industry from the inside through example and competition. This ideal was reflected also in for example GSB's relationship towards the market system:

> Acknowledging the market as the primary mechanism of wealth distribution does not mean embracing the market system, but rather trying to change it from within.

2.1.1. Personal backgrounds

Jeff Mendelsohn, founder and chair of New Leaf Paper has been an environmentalist all his life. In college, where he studied international relations, he understood the best way to have an effect on the environment was to combine environmentalism with a practical application. Addressing the business community was his first choice: he felt there he would be able to have more impact than by staying in academia or working in not-for-profit organisations. As he judged the paper industry to be one of the most ecologically harmful and resource-intensive fields, and one of the least prone to changing its course, Mendelsohn decided on forming a mission-based paper company that could act as a role model for the rest of the industry. New Leaf Paper was created in 1998. It uses recycled waste paper and environmentally-friendly bleach to create high-quality stock that is largely used to print magazines.

VineStove founder Casey Armstrong was fascinated by the new avenues technology was opening up for the future. He had been using different technologies that aim at improving collective intelligence, and the Mechanical Turk model, among others, had inspired him to find ways to put the human resources floating around the Web to use in order to help non-profits and social causes.

Mike Hannigan, the founder of Give Something Back, has a background in social movements of the late 1960s and 70s. After graduating, he was employed at Xerox Corporation, where he worked for a decade, gaining experience and professional success. Still, he was never very comfortable in the role of a businessperson, and to balance his life he was very involved in community political activism. The idea of starting his own business was inspired by the model pioneered by actor Paul Newman, in which profits are used for social causes. Hannigan realised Newman's model could also work in the office supplies world.

Neal Gorenflo started his career as a market researcher and stock analyst. He was immersed in the world of international business. Whilst working as a strategist, in 2004 he had a spiritual breakdown in a car park in Brussels, when he understood that he was not living the life he wanted to. He also realised he was probably not alone in having these feelings. After this incident, Gorenflo resigned from his job and took the next flight home to San Francisco. There, he started working with a new-found commitment to help people share through Internet start-ups, publishing, grassroots organising, and a circle of friends committed to the common good. Eventually, through these activities, Gorenflo found the right people who would start Shareable with him.

Due to company policies, Amazon Mechanical Turk representative is not appearing with personal details in this article.

2.2. The how: examples of practical innovation

The second session looked into organisational practices: strategies or innovations, and even practice-oriented visions and missions that have enabled each of the organisations to create a new kind of value for their customers.

Shareable and Give Something Back refer to looking for practices that help transfer the ethics of the civic sector to the economy.

> From economy being something you read about in the paper, into something you do daily with other people.

A big part of the work Shareable does is building awareness on what can be done by individuals to change the economy. The practical work consists of the following:

- Developing the Shareable website and audience
- Creating awareness about sharing
- Shaping the dialogue around sharing: not another form of business as usual, but a fundamentally different economic model

Community organising is an important part of the work: supporting a collection of sharing innovations that are not suitable for venture capitalist funding. This aims at spreading innovations that are local in scale, freeing up resources, and are not done because of monetary motivations. Examples include building tool libraries and setting up co-working spaces.

Shareable emphasised the importance of being able to have the participants' needs met at the same time as advocating sharing practices. This frees up resources, and allows for the avoidance of difficult conflicts of interests that may arise in fundraising for the activity.

The sharing movement is in part a response to very high tech, capital-intensive solutions to sustainability and social change.

> It is a low cost, peer-to-peer operation based on people helping each other. It is not a business network, and there is no money involved. The network is based on an idea that when people know what you want, everyone will help you. Instead of a struggle, life becomes a flow.

Shareable itself does not have a business model, but it is funded through a foundation. Shareable sees its role as catalysing, connecting, and raising self-awareness within a huge sharing movement that is going on, especially in the San Francisco Bay Area.

New Leaf Paper started out by forming a positive and achievable vision for the paper industry. Its primary goal is to make paper production more sustainable. As the strategic aim of the business is to succeed in order to inspire change in the whole field, even abstract goals are not just lofty ideals but practical guides in organising the vision into practices.

GSB's main objective is transferring as much money from the private sector back to the communities as possible. For this, they employ a normal business operation: selling office supplies. The funds gathered as profits are subjected to a democratic process, where stakeholders (the community) decide what should be done with the money.

Amazon Mechanical Turk's first users were developers and hackers. This led to the development of a partner ecosystem that has evolved by building on top ofthe platform. A very useful idea has then been providing tools for third party developers to build services that address niche or specialty users. AMT is also curating worker populations to make certain kinds of skills and qualifications more discoverable by those who need them. This includes visualising those populations and identifying workers with proficiency in particular kinds of tasks, such as photo moderation. In their work, they are "baking in" the lessons they have learned over the years, to create an experience that is easy, effective and transparent.

2.3. The future: barriers and opportunities 5 years ahead

In the last session, the goal was to identify some of the most exciting possibilities, as well as the key obstacles that could be anticipated looking five years ahead.

For Mechanical Turk, the challenge for the future is designing more highly personalised experiences and relationships on AMT. People using it sometimes forget the platform is based entirely on human labour. In the next five years, a lot of the development is going to go towards "humanising" the experience.

> There is no sign of humans anywhere on the MTurk website! This creates challenges for us. "I didn't expect that I would have to deal with people!"

On the other hand, impersonalisation may be key to the success of crowdsourcing.

> Microtasking can look very dubious because it pays people so little for a doing a task. These platforms may be moralistically attacked and then regulated, which could slow down the improvement of that communication technology. However, counter-intuitively, microtasking might also represent a route to a more equal society: Marginalised people have a place to work on their comfort level, such as collecting cans–could this be replaced by microtasking? This could be a way to help marginalised people out, although it might not look good in the media…that is why I am defending microtasks.

Technology continues to expand human potential, most recently by advances in augmented reality:

> (Google glasses) could, if combined with social search in real time/live streaming, for example, become a powerful augmented intelligence. Robotics already enables physical work from afar, via telenetworks. As a weak signal of the possibilities, a website where visitors can play with cats with the assistance of a robotic arm. As people get even more connected, start sharing more, and the rate of communication continues to rise, one can even postulate that humanity may develop traits of a hive mind type of behaviour. People are already working like computers today, and as questions about work in a highly digitalised environment abound, this can be seen as one model spreading through the whole economy. Microtasking platforms can be seen as a kind of prequel to this kind of economy.

2.4. Ethics and sustainability: background assumptions about societal change and key stakeholders

The mission of the workshop was to look for future signals in the future of the economy in terms of resource efficiency. However, the individuals participating in our workshop (who often were the founders of the organisations) self-defined and framed their activities primarily through ethics and values. The discussion thus involved many references to societal and cultural change processes.

As the discussion turned to ethics, an obvious need to define the vantage point from which the values are defined presented itself. This includes defining the primary stakeholders or those who are seen as being most affected by the actions of the company. In addition, underlying assumptions about the nature of the society and its institutions affect perceptions of a just society and ethical business. Here we will try to map the main ideas that surfaced in the discussion around these broad themes both in the workshop and in the interviews with the two organisations to whose activities the values and ethics viewpoint are especially crucial.[3]

Shareable founder Neal Gorenflo believes the reasons the sharing movement is gaining traction at this historical moment are the apparent signs, but also experiences among ordinary people that the social contract has been broken. The same feeling was also echoed by Mika Hannigan of Give Something Back:

> The real world is demanding solutions that are going to personally affect people. The real world impinges upon people. People feel they are going backward instead of forward. There is a need to look for solutions that fix that.

There was a sense of momentum about the discussion about ethics and business, grounded in the growing awareness about the distortions in the current structure of the market and politics.

> Unequal distribution of wealth and resources is a self-perpetuating process, and in part, business controls the political process. Is there a shift happening in this?

Gorenflo tracks the trajectory for the sharing culture from the MIT computer science enthusiasts in the 1950s. Their seminal idea was that better results can be obtained through sharing, and individuals should have free access to the tools they need to make things (the original hackers at MIT, for instance, picked locks to be able to keep the lights on at their lab in order to be able to keep on programming after hours). Gorenflo sees a direct lineage from these values to the sharing movement, flowing through several evolutionary steps:

> The Internet was built with hacker values by some of the same people, and the same values guided MIT alumni Richard Stallman to create open-source software. The next step was opening contents to be used as material for creating by the Creative Commons licence. Social media brought these values of sharing and creating to the masses. From there, the next logical step is extending the culture of sharing into the physical world.

Many of the views held by our interviewees were based on the idea that through communication technology, the three forms of capital (economic, social, human) are now more accessible than ever. Thus, the benefits of self-employment are gradually on the rise compared with traditional employment. Fore example:

> 3D printing combined with new connections between individuals and manufacturing facilities allows an individual to become a manufacturer within weeks.

There was a strong sense that these new technologies would lead to a kind of democratisation of the corporate system.

> Early on, corporations were better equipped to take advantage of the Internet, but now the playing field may be flattening.

There is also a notion regarding ethics that maybe people's values have not changed, but there is an increasing sense of values disconnect and a lack of opportunities to integrate them with the institutions.

> The concentration of wealth in the past 20-25 years has been an outcome of institutions, not individual values. Therefore, reconfiguring institutions is one of the most important tasks at this point.

To the question of how could ethical business become mainstream in the future, the answers were varied: Although it was argued that society is already coming close to a point where consumers demand a certain amount of transparency, some of the informants did not see a massive mobilisation through democratic voting rights affecting legislation on a national level as a realistic goal. For them, a more preferable strategy for them was to enact changes on a more local basis:

> Change through national and international bodies is not an option, too slow to non-existent. Cities and below that, communities, families...City Hall is the focal point.

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[3] Based on the data from the workshop, GSB and Shareable stress in their values social justice and responsibility, and aim to produce social change by their activities. NLP is mostly motivated by ecological concerns. The technologies, and approaches to work utilised by AMT and VineStove are identical, but the ethos they ground their work on is entirely different. AMT sees the technology in terms of labour productivity, whereas VineStove's approach resembles that of the Shareable (and the sharing culture in general).

It was also noted that change takes time, and the structures we have now have all been forged through collective effort spanning decades.

> It took 200 years to form the institutions for a capitalist society. The non-profits sector took 100 years to develop, and it was created out of a need to solve collectively identified social problems.

Some of the informants reflected on the current position of socially/ethically motivated companies in society. It was argued that social transformation through business had, to a certain extent, already become embedded into the culture. It was expected to continue and even escalate in the future, because it was considered to be so rational from a number of viewpoints.

> Before, social activists chose different career paths because business was not seen as something they could be involved in to make a change. After a few successful examples, this has altered. This can be traced back to the intractable problems that can only be solved by socio-economic changes, and business is one of the central arenas where change must be effected.

For Give Something Back, operating within the marketplace becomes a tool for societal change when eliminating the private stakeholder. This enables the alignment of individual and collective interests. It is notable that Shareable also stated this as their main aim. The difference is that GSB tries to accomplish this through modifying existing models, whereas Shareable believes that completely new economic models, such as sharing, are needed to reach that goal.

> Radical change means obstacles in all (...) facets: culture, regulation, social, business models... the linchpin is the culture: changing the story on what good life means makes it easier to change other aspects.

Some informants raised questions about the Shareable model and its sustainability in the current consumption-based economy. After all,

> Consumer culture was created when supply outstripped demand. Consumer culture was a product of concerned effort, which was done in earnest after the Great Depression in the 1930s. The model of buying things to be employed is still the basic model of how the economy works.

Models based on sharing resources will disrupt the current system, and if scaled up, they will have serious societal consequences. Thus, its implementation will demand a dramatic shift in the willingness of the citizen to live a different life.

> The sharing economy is not sustainable unless we accept the fact that many people will be unemployed. ...(We) cannot stigmatise people who cannot find work. (For this) cultural transformation is needed. Quality of life should not be dependent on the stuff you have. Sharing is a very small piece of that world. If for instance 20% of the economy were to shift to sharing, there would be less productivity and therefore less employment. In the United States in particular, there is a tendency to have less reliance on the government, but this kind of change would imply a larger community effort to deal with the consequences. Then the question would become one of how to construct a governmental apparatus that is able to implement this shift. Of course, there are huge interests that would have to be controlled.

The Shareable representative reflected on the relevance of the sharing model for the general goals of sustainability:

> It (the Shareable model) covers many of the aspects of sustainability (ecological, economic and social) at once. For instance, sharing a car saves the environment, but it also keeps money in the local economy, and being involved in sharing brings emotional satisfaction to people.

New Leaf Paper is most concerned with the environmental impact of the paper industry, and that is the focus of their activities. Yet the company's values indicate also a wider interest to change the nature of work towards more holistically sustainable practices. For instance, an important part of their value set is "meaning". The founder has a personal motivation statement to build institutions that are designed to bring out the best in people.

> Ultimately, doing societal good should not need to be an anomaly in society, dependent on personal qualities, but institutions should by default be designed to support social responsibility.

The representative of GSB reflected on how he sees the difference between social motivations and profit motivations in the context of CSR:

> There are two ways in which CSR is embedded in the business world. On one hand there is CSR introduced to an existing framework. Examples include many large companies that use resource saving to improve business. In such cases, however, there is a hierarchy of needs, and it is argued that financial issues will always override societal impact in such companies. On the other hand, there are socially responsible companies whose main aim is to have an impact on society, and business goals are subjected to this larger aim. Even there, there are deep ecological questions. GSB itself, for example, acknowledges that the tool it uses is not environmentally sustainable.

Even there are deep ecological questions. GBS itself, for example, acknowledges that the tools it uses to advance social equality are not ecologically sustainable:

> The difference is that GSB can dissolve if the community decides so, and this is very different from corporations that engage in CSR from a business point of view.

However, the interviewees agreed that both types of CSR are needed: the solution is not either/or, but both.

3. Discussion

Our research framework is based on an assumption that a shift towards more efficient resource use is on the horizon, and its drivers are threefold: first, as many raw materials are becoming scarcer, their price tends to increase. Second, in conditions of growing competition, the level of effectiveness at which raw materials and energy are used is becoming critical. Third, growing environmental awareness and legislation are putting pressure on companies to use less harmful substances in their production lines, and to serve their customers with less environmentally loaded products. These megatrends in the world economy are taken to be indicative of a new Kondratieff wave that is predominantly driven by efforts to improve resource efficiency (Wilenius and Kurki, 2012; Moody & Nogrady, 2010; von Weizsäcker et al., 2010).

Our case examples suggest that this shift, where resource productivity will be the key driver for technological, economic and social change, has a connection with shift in attitudes, communication patterns and communication technology. This shift comes along as the sense of deprivation abounds in society, where growing inequality in terms of access to education, purchasing power, housing and other traditional means of building one's life is threatening the middle-class norm (Wilkinson & Pickett, 2010). This sparks the search for alternative ways of living.

Our work with the organisations expanded our understanding of the resource efficiency framework by including an aspect of societal mind-set change. It is revealing to note that with the exemption of the Amazon Mechanical Turk, all other cases presented their approach to resource productivity in the frame of social change, meaning and ethics, rather than as an economic necessity and/or opportunity.

The participants that were primarily concerned with the societal implications of their operations and ethics, had not started to think about resource productivity because they were pushed into it by legislation or direct customer demand. Rather, they approached their businesses as vehicles that themselves push legislation and nudge customers towards a more sustainable model of the economy and society. The interviews provided many departures from the standard model of economics. Most interestingly, ethics was not seen as a means to an end for higher profits, but there was a genuine interest in using profits to advance societal good. The general feeling seemed to echo a consensus that the institutions and thinking behind the capitalist system were on a conflicting path with societal well-being, and the problems could be repaired only from the inside by showing examples of how a difference could be brought about. However, at this point the assumption remains that the marketplace will continue to be the central mechanism for wealth creation. The challenge that socially motivated companies then are taking up is finding a way to create a path within the economies to an ethical wealth distribution. Yet, there are important and still unresolved socio-cultural and political obstacles between meeting needs with resources.

Yet, it must be clearly noted that there is no direct correlation between enabling technology, organisational structure, and mind-set change. For instance, AMT and VineStove represent the same basic organisational principle and new kind of approach to work. However, AMT does not see the technology in connection to a particular ethos that would define its business, whereas VineStove's description of its activities is strongly motivated by ethical consideration.

There was variance between the companies as to how much they relied on their customers to share their value set, and make their choices based on that. The pioneer phase of corporate responsibility manifested itself in a very mainstream approach to the conduct of companies, the radical difference was reserved for thinking very differently about the role of accumulating private profits, which was deemed inappropriate. This way, the companies do their best to make a profit in the market, but the rationale is to use this as an efficient mechanism for supporting the communities where the profits come from. In our selection of cases, GSB represents this line of thinking. Typical to this generation of companies is the feeling that the customer should not need to make a choice based on values, but rather choose the company based on the merits of their products. This is exercised to such an extent that it not uncommon for the first wave of companies involved in CSR to want to keep their societal mission under the radar. Many of the social enterprises do not bring their values of ethical conduct to the forefront, or even attach that to their brand in any way. A good example is Bosch, an international appliances manufacturer, but also a social corporation that donates its profits to the community. The assumption so far has been that their social mission does not matter in the markets. Only recently have they started to wonder whether such message would be positive or negative to the market, and there are ongoing surveys being conducted to get clarity on the matter.

This attitude seems to be changing. In contrast, newer social corporations, represented in our cases by Shareable, New Leaf Paper and VineStove, intentionally channel societal change through their activities and openly expressed values and products designed around them are the foundational building blocks of these companies. Their success can be measured by how the value-based business attracts customers and imitation on the markets.

Microtasking represents an interesting solution to emerging issues in the global economy. Not consciously a "social" effort as such, the information technology that allows piecing work into atomised, small tasks has been primarily taken into use for it can bring labour productivity to a higher level. However, the potential effects of such mechanisms are vast. Obviously, they are linked to the discussion about global economy and equality. There are examples of microtasking-type platforms that have enabled people from developing countries to achieve things that would not have been possible in any
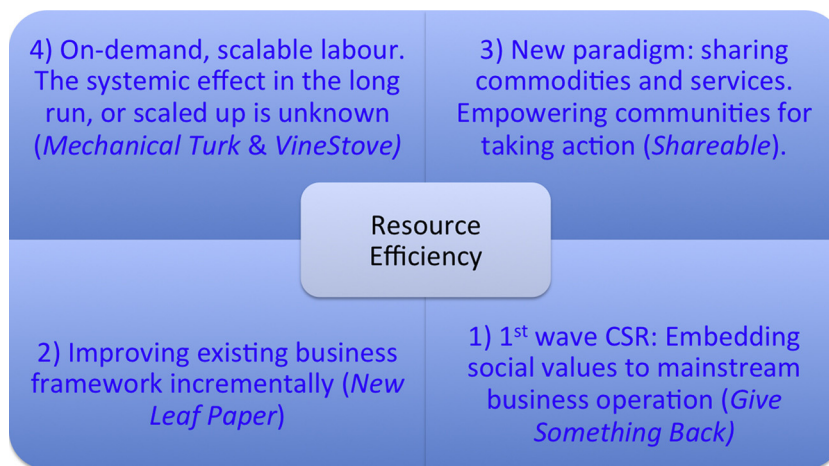
Fig. 1. Models for social corporations towards the sixth wave.

other way, such as a Pakistani youngster leveraging success in microtasking for his own business, which acted as a springboard for him getting a place on a Stanford computer science programme. It was concluded that despite the struggles of the middle class in the West, the global middle class is growing. Recently, something like microtasking has also been offered as a solution to the struggles of the middle class in developed countries amid digitalisation and growing wealth disparity. The argument proceeds along the lines where the current digital market produces wealth to a concentrated elite while at the same time destructing itself by shrinking the market. If scaled up, it has been proposed that microtasking logic could be a solution to the question of "free content production", often cited as one of the core reasons for disruptive change in many fields. The key is finding things that only humans are able to perform, and monetising them in a way that micropayments/microtasking have already paved the way for (Lanier, 2013). Mechanical Turk, for instance, represents prototypically a mechanism that allows people to monetise their spare time by offering low skill tasks that can be performed independently of time and place. This way, as was discussed in the workshop, it also offers unique opportunities for otherwise marginalised people to claim a stake in the global economy. The social cause becomes more pronounced with the linking of volunteering to microtasking, as in the case of VineStove.

In general, the participants saw that the business world is moving towards a combination of a larger set of stakeholders, with an embedded social responsibility. There will be a broader sense of accountability, and there was a sense that the idea of combining the well-being of society to the interests of the business is steadily moving towards the mainstream (Fig. 1).

3.1. Our results as a future sign of organisational value change

In order to make sense of our findings we place them in the Hiltunen's Triadic Future Sign – model (Hiltunen, 2008), composed of three aspects of change: signal, interpretation, and issue. Weak signals are by nature difficult to interpret, and their meaning and relevance are not as such definable. Triadic Future Sign aims to aid sense-making of such weak signals by adding issue and interpretation to the analysis.

In our study we have investigated the behaviour and views of small organisations that deal with resource efficiency. In our sample most of the organisations that were aiming at developing more resource efficient practices were also linking this aim with ethical motivations. We consider these organisations as weak signals, and see that they are fortified by the theory (and practices that have spurred it) of Corporate Shared Value that argues there is a strong incentive for organisations to develop more socially inclusive models for their activities. We use the Kondratieff wave theory as our interpretational framework that helps us understand why such changes might be occurring at this moment in time, and also provides for a mechanism how such fringe phenomena might rather quickly move into the mainstream as a product of the systemic restructuring that has often accompanied the changing K-wave. Thus we interpret that the signals point to a possible future (issue), where ethical considerations may be holding a more central place in organisational culture and practices.

4. Conclusions

In this article we have made the case of how by analysing and understanding long-term socio-economic waves we create a certain horizon for future expectations. Using Kondratieff waves as a framework we can postulate that the upcoming, now emerging wave will bring about new drivers for economic, technological and social development. The most important of these, in our case, is the search for resource productivity. We show how demands are rising that feed the appetite for increasing resource efficiency in production as well as in consumption. Based on evidence, we believe using resources in a smarter way will make sense to all the more wider audience, although at present it is still rare for companies to have it as a strategic focus.

As our examples imply, this may mean also taking a serious ethical standpoint. More practically, as in our sample, organisations link the resource efficiency issue with social change and the need to respond to the immediate needs of society. However, there are various forms these businesses and operations may take.

The key is that it is really about the interaction, the way the employees can engage in their daily lives with wider society. Since there was a strong voice in our material telling us that there is a growing disconnect of values of people and those of standard business, we do believe there is increasing number of entrepreneurs – and people who want to work for them–that will respond positively to this disconnection.

This emerging new era of our societies will most likely be quite different to previous societal waves. For the reasons we have discussed in this article, the pressure is now to increase resource productivity instead of labour productivity. The collective awareness of environmental destruction in terms of our ecosystems, the reckless use of materials and energy and the fortifying climatic changes add up to people wanting to act concretely on these challenges. The heavy load of recent research work suggests that we have probably come into the last decade when we can do something to prevent a fully-fledged ecological crisis from emerging (Randers, 2012; World Bank, 2012).

We treat our case organisations as pioneers in sixth wave in the same vein as one could think of early personal computer and mobile phone geeks in the 1970s as pioneers paving the way for the major communication revolution. This time the change is about sustainability and the intelligent use of resources. There is a strong argument to suggest that just as digital technologies swept across the world and changed the way we work, spend our leisure time and run our daily lives, the same will hold true for this emerging wave of ethical thinking–illustrated by our examples – which will forge new objectives and agendas for society at large, in the decades to come.

Acknowledgments

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