

Cleanweb in the UK: How British Companies are using the Web for Economic Growth & Environmental Impact

Executive Summary

Working Paper: A Market Scoping Study

September 2014

Authors: Sonny Masero & Jack Townsend

A copy of the full report is available from the lead author, Sonny Masero.

About the Authors

Sonny Masero BSc (Hons) MProf FRSA has worked in clean technology since the early 1990s for both large public companies as well as SMEs. He has been involved with national and European research projects, business consulting, project development, product development and investment. He is well-known in the UK and international clean tech markets. Most recently he has focused on the intersection between clean tech and web technologies – the 'Cleanweb'.

Sonny is the Managing Director of [GALOS](#), which stands for the Global Aggregation of Local Opportunities for Sustainability Ltd. GALOS is a company that provides investment, business advisory & interim management services to technology companies that address a global environmental challenge. GALOS provides advice on business & product strategy, sales, business development, a number of commercial topics and financing.

Sonny is a member of The Cleanweb Initiative international and European leadership groups. Sonny is a member of the West of England Low Carbon Sector Group and is also actively involved as a Fellow with the RSA in the West of England.

Sonny can be reached by email: sonny@masero.com, telephone: 07851 055635 or Twitter: @EarthShuttle.

Jack Townsend BSc (Hons) MSc has worked in web innovation and research for a decade, founding and leading the global web intelligence team of the trading arm of energy giant BP. He is finalising a web science doctorate at the University of Southampton, on the application of the Web to sustainability and resource challenges – probably the first ever Cleanweb PhD.

Jack is an organiser of Cleanweb UK, the world's largest Cleanweb community, bringing together 750 entrepreneurs, developers, designers, energy professionals, and environmentalists. He has been interviewed about Cleanweb by the New York Times and is nominated for Best Paper award at the 2014 ICT for Sustainability conference in Stockholm, for his work *Web for Sustainability: Tackling Environmental Complexity with Scale*.

Jack also coordinates the Open Knowledge Foundation's Open Sustainability group, the international community on the use of open data for the environment. Jack holds a BA and MSc in Physics from the University of Cambridge, and has received a number of awards for web innovation, including the World Bank's Apps for Climate competition, the Linked Up Prize for Open Data in Education, and the BP Helios Award.

Executive Summary

The *Cleanweb* is the web-enabled evolution of Cleantech. It is known by other names including *Web for Sustainability* and *Tech for Good*. Many agree that *Cleanweb* is a useful shorthand to convey the distinctive characteristic of this sector which uses Information & Communications Technology (ICT) to deliver web services to business customers and consumers with energy or resource efficiency benefits. It sits at the intersection of Cleantech, web technology, the Internet of Things and the Sharing Economy.

Cleanweb companies have rapidly scalable business models which can make a global contribution to protecting the environment. A Cleanweb business may not be “clean” first, but the service they deliver has a measurable environmental benefit. The use of ICT means that they can be less capital intensive, faster to scale and more accessible to customers. An attractive opportunity for investors and for sustainable development.

Cleanweb examples from the USA, particularly Nest Labs, have demonstrated how rapidly these businesses can grow and create economic value and jobs. It took just 4 years from starting up to sealing a \$3.2B sale to Google in the case of the Nest intelligent thermostat, which provides an energy saving hub for the connected home. This is green technology growth at web speed.

In the UK there is significant activity in the Cleanweb market and a real opportunity to stimulate economic growth which doesn't damage the environment. Whilst there has not yet been the runaway financial success of a Nest equivalent we have seen rapid growth from AlertMe, CityMapper, Masabi and Open Energi. The most visible UK Cleanweb companies tend to be working in the areas of smart energy management and sustainable transport, particularly in cities, whilst significant opportunity is seen in sustainable agriculture and food. Cleanweb food companies may now follow the recent and successful IPO of Just Eat which now has a market value of £1.5B. These market segments of energy, transport and food are also the areas which have significant overlap with the Internet of Things (IoT) and the Sharing Economy. The Cleanweb sits at the intersection of IoT, Sharing Economy and Cleantech.

To identify a Cleanweb company you should look for these characteristics: (i) The ability to support a change in the behaviour of a person or the operation of a thing; (ii) A scalable business model which is revenue generating; (iii) Use of ICT for connecting people or things; (iv) An application of technology that can rapidly address a significant market opportunity; and (v) The ability to increase the productive use of natural resources (i.e. energy, water, materials, etc) or address another global environmental challenge (i.e. climate change, air pollution, ocean acidification, etc.).

It is estimated that there are thousands of Cleanweb companies around the world. The Cleanweb Initiative has been establishing national hubs in many locations around the world to create a grassroots movement for change. This groundswell of activity is producing new technologies and new businesses. In the UK, at a national level this is not directed to achieve economic nor environmental policy goals and this is a missed opportunity. Capital light and highly disruptive businesses, which the Cleanweb sector can provide, are highly desirable to investors so there is an opportunity to support this UK market to grow the economy, create jobs and attract inward investment.

The UK policy environment for starting a new business is favourable at present with over half a million new companies being created each year. However, Cleanweb startups presently have limited opportunities to receive targeted support that understands how to shape their

particular commercial propositions in a way which can serve a business need and deliver environmental benefits. Cleanweb SMEs tend to fall between two stools, business support focused purely on web businesses and the other is Cleantech. There are only a few incubation programmes which have managed to combine these two worlds to produce fast growing Cleanweb businesses. Continued support and expansion of these existing programmes is essential to identify these Cleanweb innovators. Whilst a dedicated Cleanweb incubation programme could accelerator this innovation and the growth of the sector.

Finding follow-on funding is even harder for these companies as there is no targeted investment for the transition of these companies from startup to SME, that critical inflexion point at which they move from being a startup to becoming a *Scaler* business. More commercialisation support is required for Cleanweb businesses with a commercial understanding of their needs in terms of investment and funding; skills development and talent recruitment relevant to their sector; and expert optimisation analysis to increase impact in commercial and environmental terms.

The UK has an opportunity to capitalise on the potential for economic growth in the Cleanweb sector. There is an opportunity for the UK to be the European leader in this field. The danger is that this promise could fade without the right support for this technology and these businesses. Cleanweb SMEs are already looking to the USA and continental Europe for investment and business support. Rather than these businesses moving overseas the UK could attract more of these types of business to set up shop in the UK.

Political support for the Cleanweb sector could also lead to faster growth of this promising sector in the UK. Policy mechanisms that send clear messages to businesses and consumers about the environmental impacts and the need for better environmental performance would support the growth of Cleanweb business. In particular the energy, transport and food sectors. Measures to support the use of ICT for addressing climate change and environmental policy goals and the need for more resilient cities would be equally valuable in the support of growth. Incentives for responsible investors to place money into businesses which have an environmental impact, particularly at an early venture stage, could also see much needed growth finance flow into these businesses.

The grant funding provided by InnovateUK and the European Commission is becoming more accessible to SMEs and is being targeted on Cleanweb areas of interest such as energy, transport, food and cities. More emphasis is still required on the benefit of ICT as a key technology in solving environmental challenges in a commercially viable manner. The UK has a rich seam of academic research and industrial research, development and innovation in the Cleantech and high tech/ICT sectors. The application of this technology expertise for clean goals is an important opportunity for economic growth at a regional and a national level. This is exportable UK intellectual property.

Cleanweb companies can address different sector challenges, but underneath these commercial propositions there is significant overlap in the use of ICT. It is here where there exists opportunities for greater collaboration and knowledge exchange to accelerate growth.

To catalyse the UK Cleanweb sector it needs more direction. The Cleanweb UK network is a useful grass roots movement providing a valued forum for the exchange of ideas about the Cleanweb. This should be built on to stimulate growth and competition. More needs to be done to create links with Universities, funders, investors, suppliers & customers. A focal point is required for collective actions to champion the needs of the UK Cleanweb sector and facilitate specialist support for the sector. To do this successfully there needs to be a collection and dissemination of data relevant to the growth of the sector, which this report has started to do. This is the first of nine recommendations to accelerate the growth of the UK Cleanweb sector which are given in section 7 for Cleanweb UK, the business community and Government.

Contents of full report. Available from the lead author, Sonny Masero, on 07851 055635.

Table of Figures	3
Abstract & Acknowledgements	4
Executive Summary	6
1 Introduction	8
2 Summary of Cleanweb Market.....	9
3 Portrait of UK Market	19
4 Emerging Trends	29
5 Challenges and Enablers for Growth.....	37
6 Support Needs of Cleanweb UK Companies	42
7 Recommendations & Further Work.....	46
8 Conclusions	50
Appendices.....	51
A. Methodology	51
B. Cleanweb Timeline	52
C. Cleanweb UK Start-up Company List	55
D. UK Cleanweb Company Summaries	58
E. Cleanweb UK Start-up Categorisation	62
F. Cleanweb Academic Research.....	67
References	68