



## General futures and issues

Throughout 2018 we have noted a range of future-related issues and concerns in our blogs.

### What might be the future for the sea?

*Huw Williams, SAMI Principal, reviews a report from the Government Chief Scientific Adviser, Foresight Future of the Sea.*



The Government Office for Science Foresight team published [this report](#) in March. It looks to suggest a new strategic direction to UK marine and maritime policy, in particular to seize opportunities and avoid strategic threats.

The report points out that the sea matters to UK because of the economic effects both on established sectors (eg fishing, oil and gas) and emerging ones (eg aquaculture, off-shore wind); and environmental effects (biodiversity and ecosystems). They also focus on governance (eg international treaties). It argues that the UK can seize new opportunities because of its historically strong marine and scientific capabilities, and that “business as usual” is not an option (it didn’t actually say why, but it would have been surprising if it said it was!).

The report makes many recommendations for policy action, but in this note I have focused more on the trends it identifies. SAMI itself has produced a set of 12 “megatrends” (email [info@samiconsulting.co.uk](mailto:info@samiconsulting.co.uk) for a copy) and it’s interesting to compare those with what Go-Science have come up with.

At a top level they suggest that:

- New technology, such as autonomous vessels, will open up new areas for exploration and exploitation, and increased trade will make the oceans busier;
- A growing world population will put pressure on resources;
- Climate change will impact both industry and communities.

Looking in more detail, the report uses a STEEP approach to identify trends:

- **Social:** Population growth and consequent resource demand; the impact of an ageing population on workforce and coastal communities “where people



are on average older than in the rest of the UK”; global migration to the coast as a result of urbanisation – 12 of the world’s largest 16 cities are within 100km of the sea. The SAMI megatrends also identified changing generational values as an interesting trend, which in this context could translate into greater environmental awareness and willingness to act.

- **Technology:** Autonomous vessels and AI will enable a better understanding of the sea’s potential, make exploration of the deep sea easier and also improve monitoring of the marine environment and illegal activities; as will improved satellite communications (we would argue that the Internet of Things plays in to this too); cybersecurity will be an issue here too; biotech will open up new “marine genetic resources”; alternative fuels are being developed to help reduce carbon emissions; AI will also impact the skills requirements for the maritime industries.
- **Environment:** Clearly climate change is a major issue but more immediately so is over-exploitation – fish stocks are under threat with over 30% being fished unsustainably, creating opportunities for aquaculture (fish farming in plain English); ocean warming is leading to a decline in cold-water species and changing patterns of fish distribution; sea levels are forecast to rise by up to a metre by 2100 impacting coastal communities and infrastructure; the sea is become more acid and algae blooms are leading to de-oxidisation; pollution from plastics (expected to treble by 2025) and chemicals continues to increase; there could be an effect on carbon sequestration, which to date has absorbed much of the anthropogenic carbon emissions.
- **Economics:** The report notes OECD expectations of growth in the “ocean economy” eg in trade and offshore wind power, and growing reliance on the sea for resources ; there may be a decline in some UK industries (eg offshore oil and gas) and disparities between regions; overall they expect to see more seaborne trade and the emergence of new sectors such as deep-sea mining and offshore renewable energy (wind, wave and tidal).
- **Politics:** Brexit, and what follows the Common Fisheries Policy and its impact on trade patterns, represents an opportunity for a “Global Britain” to take a lead in international maritime organisations; the increasing value of marine resources may increase potential geo-political conflict eg in the South China Sea or Eastern Mediterranean; political instability may be caused by extreme flooding and the failure of economies based on fishing. Wider geo-political issues which we’ve identified, such as challenges to international co-operation and the rise of other economies are, perhaps understandably, missing.

As to the **implications** of these trends, the report takes an upbeat view for the UK, arguing that is uniquely positioned to lead because of its historical position. It calls for an Industrial Strategy that features the “ocean economy” and, through appropriate support for marine science policy and certain emerging sectors, maximises the UK strengths in areas like offshore wind power and marine insurance.

The report makes some 16 different **recommendations**, the first and most fundamental being that “The UK should develop a more strategic position, with clear priorities, with regards to its marine interests”. No surprise there. Generally, the recommendations focus on ways for the UK to exploit commercial opportunities, manage environmental challenges, and take a leading position in international governance bodies.



Written by Huw Williams, SAMI Principal, [published 11 April 2018](#).

## Blockchain used in world trade



I have not had a chance until now to blog about the [Long Finance report on the impact of distributed ledgers on trade, published in April](#). It was launched at the House of Lords and looks at Smart Ledgers (blockchain) as potential facilitators of global trade flows. It is particularly relevant given recent developments in Brexit discussions.

The impact of Smart Ledgers will be to reduce cost frictions associated with processes such as paperwork and identity checking. This could facilitate the creation of new business opportunities, and reduce the volatility associated with international trade. For this reason, the report was sponsored by, among others, the Worshipful Company of World Traders.

The key findings of this report into the potential economic impact of Smart Ledgers on world trade are the following:

- Smart Ledger technology could boost world trade in goods by at least \$35 billion dollars per annum. The cost of importing a single container could, therefore, be reduced by around \$46, by simplifying procedures. These potential benefits are driven by a 2.5% cost clawback assumption, supported by case studies on previous technological advancements in trade.
- If reduced uncertainty is also taken into account, the potential gains become even larger, with a potential monthly net cost saving of \$172 million (or, approximately, \$2 billion per annum). This would boost world GDP by \$10 to \$20 billion and could, potentially, add between 450,000 and 900,000 to the worldwide demand for labour, boosting wages and living standards worldwide.

Boosting world trade would be of particular benefit to the United Kingdom (UK), for two reasons. First, as a small island economy, it is relatively more dependent on world trade than most countries, and second, because Smart Ledgers offer particular advantages in solving some of the problems that might emerge from Brexit. The likely gains to UK GDP might be given an estimated boost of £0.4 to £0.8 billion, without taking into account the effects of Brexit.

Written by Gill Ringland, SAMI Fellow Emeritus, [published 1 August 2018](#).



## Red Lights on the Dashboard – What if The World Suffers Another Crash?

Since the crash of 2008 and the Eurozone crisis of 2011-12, forecasting what will happen even the near future has become a lot harder. The rise of populist parties on the left and right; the UK vote to leave the EU; the election of Donald Trump as US President all marked a climate of “no-one knows anything” in World Affairs: a climate where political, economic and generational uncertainties are supplemented by the great unknowns of the 4<sup>th</sup> Industrial Revolution and its impact on jobs, wealth distribution and society.



Those in search of a quiet life might have hoped that this period would play out over time, and things return to “normal” – if such a state exists. They are likely to be disappointed, and it may be that things are about to get a lot more unpredictable. There is a lot of “noise” on discussion groups and social media about the possibility of another economic crash, following on from 2008.

In its **Global Risks Report for 2018, the World Economic Forum identified its own economic risks** which highlighted as warning factors:

- unsustainable asset prices, eg US stocks, which have only reached higher levels in 1929 and 2000, or the global house price bubble;
- indebtedness, where we have seen significant increases in the amount of public debt in the major economies, and where non-financial sector debt has risen from \$80 trillion in 2007 to \$135 trillion in 2016; and
- structural weaknesses in the global financial system, with doubts about the robustness of banks’ risk-weighting mechanisms, and further concentration of assets in the hands of the 30 biggest banks.

WEF identified three new and emerging challenges:

- Limited Firepower to combat a downturn – for example the lack of further scope to reduce interest rates;



- Technological disruption through the impact of the 4<sup>th</sup> Industrial Revolution, affecting employment in developed economies and destroying the conventional pathway to growth for developing economies; and
- Politics and protectionism – whether disputes within blocs (Brexit, NAFTA), between blocs or between nations (US, EU, China).

While the WEF noted that 2017 had been a year of recovery, the Economic Risks report concluded,

*“The risk is that we will hit a tipping point at which point everyone prices in these tensions, with a rush to the exits that hits asset prices, strains the resilience of the global financial system and tests whether policy-makers retain the firepower to prevent deep and long-lasting impacts on the real economy.”*

## Beyond Davos

Looking beyond the WEF’s warnings, we see risky behaviour in the major economies, for example the growth of covenant-lite loans in the US, which looks uncomfortably similar to the derivatives boom that led to the 2008 crash. In Italy the new coalition Government is threatening a confrontation with the ECB and the creditor nations in the Eurozone over the size and terms of Italy’s sovereign debt, which could precipitate a crisis in Europe bigger than the one of 2011-12.

Meanwhile many of the most important developing economies: such as China, Turkey, Russia face financial, fiscal and monetary problems of their own.

## The Importance of Scenario Planning

In the long period of almost uninterrupted growth from the late 80s until the 2008 crash, it was possible for strategists to assume relatively stable and benign economic circumstances. This is no longer the case, and Governments and businesses – in formulating their medium-term strategies – need to consider the impact of adverse economic weather on their aims and objectives.

The WEF’s new and emerging challenges, combined with a further downturn, would create an extremely difficult environment, both economically and politically. 2008 has seen the loss of confidence in political and economic institutions, and the concomitant rise of populist politics, both on the right and the left. Countries that are dealing with increased levels of debt and citizens, many of whose standards of living have stagnated or fallen since 2008, may struggle to survive another serious downturn.

Last October I **[blogged about the possibility of a new “Year of Revolutions”](#)**. An economic crisis would make this considerably more likely. And it would raise further uncertainties that only a scenario planning approach can truly factor into strategic planning. Here are just three:

1. Would a second financial crisis further undermine confidence in “established” institutions and political parties, or would it lead to a shift in opinion against populism (if the blame for the new crisis were attached to populist politicians)?
2. Would the major economies have the firepower to respond to a second crisis; if not, what would be the social and political consequences? How to avoid a



- year of revolutions? And what sort of societies and systems would emerge from the upheaval?
3. How would emerging technologies play in such an unstable and volatile world economy – for example with increasing inequality leading to political polarisation?

Here at SAMI we'll be keeping our eye on these trends and possible scenarios that might arise. Can anyone afford not to?

*Written by David Lye, SAMI Fellow and Director, [published 6 September 2018](#).*





## Anticipating threats



The disruptive use of drones at Gatwick Airport is certainly unprecedented, unique and concerning. That a major element of the country's infrastructure and the lives of 120,000 people can be thrown into so much disarray by simple and no doubt readily available pieces of equipment is worrying. But was it unforeseeable, was it a "black swan"? Work we did back in 2014 suggests to me it was not.

SAMI had been commissioned by a transport sector client to monitor technology developments. Drones were then beginning to be used in an increasing number of applications and it was clear from our horizon scanning that they would soon fall in price and become much more widespread, and turn into the common retail product we see today.

We could also see some early signs that this would cause problems. Some drones were crashing, there were some near misses with aircraft, a drone was even present at a terrorist attack in Sydney. That year there was the first conviction (in France) for the dangerous use of a drone.

At the time drones fell under regulations designed for model aircraft. We noted that there were calls for a "drone law", and indeed over the years there have been increasingly strict regulations put in place to control their use and create "no-fly" zones.

But moving on from technology to the way it is operated, we realised that the rapid growth in sales would lead to their use by people ignorant of the regulations or even wilfully disobeying them. Increasing the penalties for misuse might cause some to think twice, and give the satisfaction of punishment, but it didn't actually prevent dangerous activities. The issue would become one of enforcement. Back in 2014 we used the analogy that policing drones would be like trying to stop kids from riding motorbikes on the common, not like licensing helicopter pilots.

We were also concerned about deliberate malicious use of drones. The Gatwick incident, although hugely disruptive, is in many ways more benign than it might have been. The potential use of drones by terrorists or others wishing to cause serious harm was clear back in 2014. The drone operators at Gatwick could have deliberately flown the drone into a plane as it was landing, causing untold havoc. Drones could be armed with explosives and targeted at nuclear installations. Drone defence systems would be necessary.



Clearly these were not in place at Gatwick – and presumably not at other UK airports either. Why was such a plausible scenario not acted upon?

It calls into question the way in which decisions are taken about the impact of unprecedented and possibly unlikely events. Again in an airport context, spending on snow-clearing equipment in the UK is seen as unnecessary because we have so little snow it is better to bear the cost of a little disruption – in Jamaica it would be stupid, in Norway essential.

Are there lessons for other technologies? The FBI some years ago considered the possibility of autonomous vehicles being used as “suicide” bombs, though presumably their use to cause traffic chaos would be easier to stop than the Gatwick drone attack. The risks of cyber-attacks on the Internet of Things has been noted, but has it been acted upon?

When money is tight (and isn't it always) spending on contingency plans coping with theoretical problems can be seen as wasteful. That such significant sums are being spent on a “no-deal” Brexit tells us something! Structured scenario planning can help decision-makers evaluate the effects of plausible but uncertain futures, identifying those high risk, low probability events that need serious attention.

*Written by Huw Williams, SAMI Principal, [published 21 December 2018](#).*





## 2018 and all that.....



“The seeds of the future,” they say, “lie in the present.” So for our final blog of 2018, we thought we would look at SAMI’s present – at the changes we have seen in 2018, and where we think they may take us into the future.

The global situation has grown, if possible, even more uncertain than when we started the year. Old certainties are coming up against new politics; disruptive new technologies are vying for their place alongside established ones; and splits once papered over seem to be widening by the day. Our role as futurists and strategists demands that under such circumstances, we step up and play our part, both in thinking and in action.

We started the year buoyed up by [independent research](#) which quantified the value of “future preparedness”. In a robust 7-year longitudinal study, René Rohrbeck showed that the right Strategic Foresight practices boost profitability by 33% and market capitalization growth by 200%. Whilst the news that some 60% of UK companies have done no preparedness for the UK’s departure from the EU at the end of March 2019 seems bad news, the fact that 40% have is perhaps an indication, using Prof Rohrbeck’s figures, of where one should look for the successes of the future.

It is, incidentally, not too late to get our advice. We have been working with thinktanks and industry, as well as at conferences at the EU, the Institute for Risk Management, and the Chartered Quality Institute with our “Britain in 2030: four post-Brexit scenarios” project, as we play our part in ensuring that organisations and companies think hard and effectively about this key concern in Britain’s future.

SAMI is at the forefront of thinking about strategy and the future, reflected in numerous publications this year: Emeritus Fellow Gill Ringland and Associate Patricia Lustig’s book, [Megatrends and How to Survive Them : preparing for 2032](#), was published by Cambridge Scholars Publishing. SAMI associate Professor Paul Moxey’s book [“Certificate in Corporate Governance”](#) has just been published by the ICSA. Former SAMI Fellow Peter McKiernan’s latest book [“Scenario Thinking”](#) is available to download free for a limited time. We had articles in on the [new UK Corporate Governance Code](#) in Transparency Times; Dr Wendy Schultz and Jonathan Blanchard Smith both presented papers at the EU’s [Future-Oriented Technology Analysis](#) (FTA) conference on June 4th and 5th, published as part of the Proceedings, and Ringland, Lustig and Blanchard Smith will shortly be publishing based on Gill



Ringland's paper on "The near future to 2030 and its potential impact on the role and impact of International Institutions on Economic Policy" at the XV International Colloquium of the World Academy of Arts & Sciences in Brussels. Nicola Stacey of the Health & Safety Executive presented a paper on the work they and SAMI did for EU-OSHA at the **Safety of Industrial Automated Systems conference** in Nancy. The paper is available in the volume of Proceedings.

And there were awards! SAMI won Best Enterprise Training Consultancy in SME News' **2018 Greater London Enterprise Awards**. Patricia Lustig has just won an award from the Association of Professional Futurists for 2018 Most Significant Futures Work for works that advance the methodology and practice of foresight and future studies with **"Strategic Foresight: learning from the Future"**, Triarchy Press, 2017. And at the Chartered Insurance Institute President's Dinner, SAMI's work on **"Building Resilient Households"** was singled out for a special mention in the "Building Public Trust" award category.

We published our blogs throughout the year, ranging from series on megatrends and the future of Africa, to Brexit and the effects of AI on the legal profession. And, of course, we launched our training portfolio – a range of courses designed to help businesses understand the future, and develop their governance, to prepare them for whatever lies ahead.

So that's been us. We thank all our clients with whom we have had the pleasure of working throughout the year – whilst we have helped them understand their future(s), they have also brought new ideas, new concerns, and sometimes taken us in ways which we could not have imagined. It has, without exception, been a pleasure. So if that's the present, what does the future bring? Our new website will be launched early in the new year. We shall be working with European institutions and with European clients as well as those in the UK, as we help them make – as our tagline says – "robust decisions in uncertain times". We will be helping companies deal not only with Brexit as an event, but with the risks and opportunities that flow from it. We do not make forecasts – we look hard at the world and its possibilities to think about alternative future worlds for our clients – and whilst some of them are challenging, in all of them there are opportunities. As ever, get in touch if you'd like to know more. We wish you all a happy, relaxing and refreshing holiday season. You may well need it.

*Written by Jonathan Blanchard Smith, SAMI Fellow and Director, [published 19 December 2018](#).*