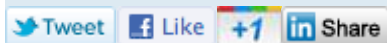




Futurescape 26
A Year of Growth and Transformation
February 1st 2012



Welcome to our first Futurescape newsletter of the New Year. We trust you had a fantastic festive season and are well prepared for the challenges in the year ahead. Special greetings and wishes to our clients and partners in Asia who have recently celebrated Chinese New Year. For Fast Future, 2012 represents a year of growth and transformation as we expand the scope of our services and the size and capability of our team. I'm delighted to say that Fast Future continues to grow, and we welcome Louise Carver to the team – she joined as a foresight researcher at the start of January. Louise has an undergraduate degree in Anthropology and a Masters degree in Science, Society and Development from the Institute of Development Studies, Sussex University. She is also the founder of a successful leisure business. We know she will add a lot to the team and are very pleased to have her join us alongside Iva Lazarova and Alexa du Plessis who we introduced in our December newsletter.

Whilst we expect the wider economic outlook to remain turbulent for some time to come, I am delighted to say that the year has started on a very positive note for us. Tim Hancock, David Saer and I have just returned from Washington DC where we launched a major new research and consulting project for the American Association for the Advancement of Science (AAAS) – the largest multi-disciplinary science association in the world. The project involves scanning the future science landscape, scenario planning and development of the AAAS long rang strategy.

For our first newsletter of 2012 we are focusing on introducing our team. We have asked member to share their ideas on a trend or driving force that could have a significant bearing on our lives over the next decade or more. The team have just completed an intensive week of foresight training in Oxford and are keen to share some of the drivers of change that we explored during the course.

The final set of our 100 predictions for 2012 will be shared in the next issue. Our previous

four predictions can be found [here](#):

[Inevitable Surprises](#)

[Big Conversations](#)

[The Winds of Change](#)

Copies of a number of our recent and past presentations and reports can be found [here](#)

In this edition we cover the following:

1. Key Trends and Drivers
2. Rohit on the Road
3. About Fast Future

As always we welcome your feedback and contributions to future newsletters. Copies of previous editions of the newsletter can be downloaded [here](#)

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Watch a short video of Rohit's keynote speech on global trends [here](#)

1. Key Trends and Drivers

Louise Carver

Ardent communicator, surprised luxury tents hire business owner, and reluctant early morning outdoor swimmer

What interests me:

Food waste bio-fuels for shipping

Why I chose it:

The emergence of next generation food waste bio-fuels for the commercial shipping industry

is an exciting development that offers the promise of much improved sustainability in global supply chains.

There is currently no binding legislation limiting Green House Gas emissions in the shipping sector. Hence the arrival of a commercially viable ship design that uses bio-fuels derived from food waste may become an attractive proposition for companies seeking to protect themselves from volatile oil prices. This would have the spin off benefit of improving predictability on long term freight costs.

The first available ships powered by bio-methane derived from the anaerobic digestion of food waste are now available. They are being used to supplement wind powered mechanical sails in the case of insufficient wind power, See for example those developed at the [B9 Energy Group](#). Since this use of bio-fuels is hybrid - combined with wind along a 60/40 split – and used as a backup, this means it delivers a much higher energy efficiency than using it in aviation or motoring for example.

What impact could it have in the future:

With the successful adoption of several bio-fuel ships, it is possible that a networked infrastructure system could emerge in ports around the world to support the refueling of ships with bio methane derived from the commercial food waste of that country. This usage of waste offer significant potential financial savings for companies and governments in managing food waste, and would improve the sustainability rating for two industries simultaneously.

Furthermore, the development of a globally supported network of suitable port infrastructure might parallel and strengthen the trend towards cooperation that we currently see emerging in society and business. Enormous value and utility could come from collaboration and cooperation between various fleet operators sharing the cost of new bio fuel infrastructure upgrades. After a slow initial rate of adoption of bio-fuels as an energy source, increasing take up by shipping companies could help encourage similar shifts in other sectors and offer shippers greater stability of freight costs. There is a however concern that widespread adoption of food waste bio fuels by other sectors could have an adverse impact on the security of supply and the price of food waste for the shipping industry.

Alexa du Plessis

Passionately African, an adventurer, believer in the responsibility to imagine our future and create it

What interests me:

Organic cities

Why I chose it:

The trend towards greener and more eco-friendly cities, and the integration of green living spaces into the built environment is an exciting one, creating new possibilities for housing, transport, health, community, and a better standard of city living. For example, [the High Line](#), an abandoned rail line turned green space in New York City has provided a creative new community and educational space for New Yorkers. Simultaneous to the greener cities trend, it is becoming possible to genetically engineer plants and trees, or

shape them along predetermined lines – an approach pioneered by firms such as [Pooktre](#). Others such as Terraform are working in conjunction with MIT to create an [architectural design for an organic house](#), as well as more commercially viable alternatives for growing buildings.

What impact could it have in the future:

Terraform's design might not be a reality any time soon, and even if it gets going will take roughly 15 years to grow. However, the paradigm shift towards sustainability and creative thinking, aimed at cutting carbon and reducing the environmental costs of building is encouraging. The implications are more than encouraging: if houses and cities became more organic and there was a greater integration of the built and natural environment, we could see a massive reduction in health complications. People would have greater accessibility to spaces in which to move and exercise, potentially reducing the prospect of obesity and obesity related diseases. Similarly, cleaner air and less industrial toxins would benefit general well-being.

Organic construction approaches suggest that transport needs would change, as building materials would be grown on-site or nearby, rather than trucking or shipping in cement and bricks from industrial zones. Interconnected green paths through cities could facilitate a rise in cycling and walking as a mode of transport. Importantly, the way a house is viewed legally, financially, and through city council regulations would need to change drastically, to allow for these types of homes to become a reality (notably height restrictions!). Given these regulatory challenges, it seems likely that it will be forward thinking cities, with innovative leaders seeking new solutions, which will have to be at the forefront of sustainable organic construction innovations.

Iva Lazarova

Always interested in getting to know new cultures, languages and people. Takes pleasure in being an explorer of the future.

What interests me:

Brain machine interfaces (BMIs)

Why I chose it:

This is an interesting and controversial trend because the potential applications are at the same time exciting and frightening. It provokes us to think about technological and scientific progress, but also about the relationship between humans and machines and the future of humankind. Recent experiments that have interpreted both the images and words an individual is thinking about offer positive hope for those with neurological impairments while also raising the specter of big brother literally monitoring our every thought.

BMIs have traditionally been developed and used for therapeutic purposes – to heal deafness, blindness, or to help disabled people regain control of their lives. For example, in this clip, a man paralysed almost entirely from the neck down navigates through a virtual world using a brain-computer interface [here](#).

BMIs are also used for entertainment. For example Emotiv were one of the first firms to

launch a neuro-headset that allows for the exploration of virtual realities for [gamers](#). However, the application of BMIs could be much more controversial if we use them in order to enhance human abilities and performance. This would inevitably provoke ethical concerns. For example - is brain augmentation through brain implants a positive or negative development for society? Will everybody have access to BMIs? What will the overall impacts of brain enhancing BMIs be on society?

What impact could it have in the future:

In one possible scenario, where the economic climate continues to be unstable, and inequality still prevails, BMIs might only be available to the richer strata of society. This could lead to the rise of two different classes of humans, which could replace differentiation based on demographic factors such as nationality. The 'neuro-advanced' humans will be those who can afford brain augmentation; the less advanced, will be those who cannot. This in turn could lead to the subjugation of less advanced humans by those with access to BMI augmentation.

An alternative scenario could depict a world in which there is a fairer distribution of wealth among people, while science and technology continue to progress rapidly. If the nature of BMI becomes much more sophisticated, brain implants could be made of tissue, instead of metal. Early experiments in growing neurotransmitters onto brain cells suggest that this could one day be a reality. In this scenario, BMIs will be available for everybody. This could lead to a seamless union of men and machines, and if applied on a global scale, to the 'upgrade' of the human race! Some refer to this ultimate blurring of the brain machine boundary as the Singularity.

Tim Hancock

Nomad, triathlete, interested in the journey as well as the destination

What interests me:

3D Printing.

Why I chose it:

The world's systems, from the environment to the economy are strained and the growth model we have long taken for granted is coming under increasing pressure. Whilst there are no silver bullets, there are emerging technologies that could both drive and benefit from socio-economic and cultural change. They offer the potential to reshape the capitalist model to be more equitable and work for the betterment of more people. As a key exemplar of the next technological frontier, 3D printing offers the potential to help usher in a new form of localized independent capitalism, ['...based on creating new value, not trading old value.'](#)

What impact could it have in the future:

Clearly the technology as it stands is not yet a sufficient replacement for large scale manufacturing, global supply chains, or the large commercial forces that control them. Rather, as a transitional technology, 3D printing could help spur more 'manufacturing' based entrepreneurship and artisanship. The move to a 'hyper local environment' holds great promise for sustainability, both environmental and economic, as well as potentially reinvigorating people's willingness to participate in the system itself. [The Wohlers Report](#), an annual in-depth study of the advances in additive manufacturing technologies and

applications, estimates 3D printing will grow to become a \$5.2 billion industry by 2020, up from \$1.3 billion in 2010.

Technologies that we now consider prosaic and take for granted – like the networked personal computer, for example - were once far more expensive and of less utility. Often the potential of these tools are only realised when the cost falls sufficiently. [Gartner](#) predicts that the price for professional 3D printers that now sell for \$15,000 will decline to about \$2,500 by 2020 and will deliver better performance and more features.

There may come a point where batch production cost for 3D printing falls sufficiently such that we see a reversal in the economics of scale that are currently driving the offshoring of manufacturing to locations in the evolving world. Other trends, such as the increasing desire for personalisation and ‘authenticity’ may further strengthen the move towards more [production runs with lower volumes per run](#). In this scenario, manufacturing one off or even multiple items may not be a capital investment but just a marginal one.

David Saer

Thinker, dreamer, broad conversationalist, navigator of the realms possible and potential.

What interests me:

Lab-grown meat

Why I chose it:

In an attempt to revolutionise the world’s diet, efforts are currently underway, spurred by a million dollar prize offered by PETA, to produce the world’s first commercially viable lab-grown meat fit for [human consumption](#). If successful and accepted by global consumers, lab-grown meat could potentially have a vast impact in helping to reduce both humanity’s environmental impact and animal suffering. This innovation could also help feed a rapidly rising global population, with emerging markets increasingly developing a Western taste for larger quantities of meat in their diet.

Cultured meat, also known as ‘in vitro meat’, extracts stem cells from an animal such as a cow or pig, and then converts them to muscle cells. These are then cultured on a scaffold with nutrients and essential vitamins, and grown to the desired level. The muscle cells are ‘exercised’ through mechanical or electrical means, giving the cells the ideal structure, texture and strength. The end result can then be shaped into familiar meat products such as sausages, [hamburgers and steaks](#).

What impact could it have in the future:

Demonstrable success of this new technology could occur soon, with scientists such as [Mark Post](#), head of the department of vascular physiology at Maastricht University, declaring his intent to produce a [synthetic hamburger](#) in 2012 which he hopes will be eaten by a famous vegetarian celebrity. The technology remains in its infancy, with the cost of a single synthetic hamburger estimated at £250,000, and initial trials have produced a meat lacking a desirable taste or texture. However, as the technology improves, we could reach a stage where we could engineer the meat to taste like any animal or other flavour we desire.

If in-vitro meat is widely accepted by consumers, it could have a large impact on how we produce and consume food. Currently, the [process of farming animals](#) for food is wasteful in terms of the amount of land and resources used, and harmful to the environment, with livestock production estimated to generate nearly a fifth of the world's greenhouse gases. In future, areas of woodland previously cut down for agricultural use could be replanted with trees to act as carbon sinks. Meat could be grown en-masse in urban areas, utilising a lot less space and cutting down the need for a costly and polluting supply chain. Eventually consumers could even be able to grow meat in their own homes.

Rohit Talwar

Fervent Chelsea fan, traveller, passionate about creating the future – not waiting for it.

What Interests me:

The Living Dead

Why I chose it:

The business environment is now characterised by complexity, uncertainty and rapid change. In this environment, new and remarkable brands rise to prominence with increasing speed and regularity. At the same, the spotlight is falling on those large older firms that seem incapable of adapting to new business thinking, adopting new ways of working or experimenting with new financing and revenue models. Some of these giants of the past are lumbering along believing they are *'too big to fail'*. The reality for many is that they are probably *'too bad to survive'* and time is running out for many of these *'dead firms walking'*.

This phenomenon is particularly visible in the major airline sector. The players in the sector are strung out across spectrum of service, performance and - most importantly - management mindset that could take decades for the poorest performers to traverse. We see some clear archetypes emerging. At one end we find the truly exceptional performers such as Korean Air and Etihad whose philosophy is manifested through attention to detail across every aspect of the organisation from sales to baggage handling. Close behind are the excellent carriers such as Air Canada, Jet and Emirates who are on course for exceptional. In the middle are a number who oscillate between good and mediocre. Then come a group of unjustifiably arrogant carriers who have fallen a long way behind the pack but are still conceited enough to believe that everything they do is right.

Finally there are those such as United who have simply lost the plot. The malaise in such firms seems to run through their every action, and the attitude at the point of customer contact can vary from aggression through indifference to resignation. Years of risk averse and flat footed management decisions, a failure to respond to signs of change and poor attempts to imitate their competitors have left these firms looking weak and vulnerable. Successive rounds of management come in with brave new world strategies that are at best inept and more often than not appear like deliberate self harm to the outsider looking in.

What impact could it have in the future:

From a pure economic standpoint one might argue that the investment made in these firms is a sunk cost and we should focus now on how best to use any new money that might be available. From an investor perspective, would the money be better spent investing a new

start up with no baggage or sunk into these giants of yesteryear that still have networks and assets such as landing rights that may be value? From a human standpoint the idea of closing down such entities is a tough one to countenance. In the case of United, the [website](#) tells us that there are over 80,000 employees – who would be made redundant if the company were to close.

For government the challenge lies in developing a policy that will probably be tested time and time again over the next few years as these titans teeter on the brink. Should governments let the market operate freely and hope the labour market will generate new opportunities for the hundreds of thousands that could be laid off across multiple sectors? Alternatively, if the government were to intervene, who should be supported, to what level and for how long? Some would point to the successful recovery of General Motors following the recent US government bailout of the auto industry. Others would argue that protection of many banks and the banking system in 2008-09 may simply have made matters worse and increased the eventual pain when the problem gets too big to fix.

There is no simple solution and we know that investment in new sectors may not create jobs at the pace or with the skill profile to absorb those who could be made redundant. What we do know from economic protests around the world over the last two years is that the populace will expect action and be willing to take to the streets to drive home their point.

2. Rohit on the Road

In the coming months Rohit will be in Kuala Lumpur, Dubai, Vancouver, Orlando, Washington DC, Barcelona, Oslo, and Frankfurt. Please contact him directly at rohit@fastfuture.com if you would like to arrange a meeting or a presentation for your organisation during one of these trips.

3. About Fast Future

Fast Future is a research and consulting firm that works with clients around the world to help them understand, anticipate and respond to the trends, forces and ideas that could shape the competitive landscape over the next 5-20 years. We draw on a range of proven foresight, strategy and creative processes to help clients develop deep insight into a changing world. These insights are used to help clients define innovative strategies and practical actions to implement them.

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