



Megatrends

2018 saw the publication of Patricia Lustig and Gill Ringland’s book ‘Megatrends and How to Survive Them’. Using the book as a base they also wrote a series of blogs which has continued into 2019. This collection of blogs also includes an additional piece, written prior to the book publication, on the UK Government’s four grand challenges and megatrends.

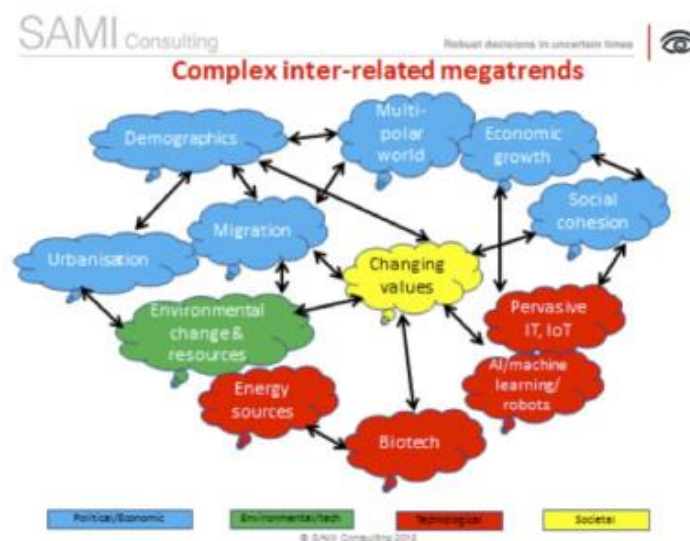
Four Grand Challenges and Megatrends

As part of its Industrial Strategy, the Government identified four “Grand Challenges to put the UK at the forefront of the industries of the future”. The aim is to build on the UK’s existing strengths and develop new ones through the collaboration of business, science and policy makers. In this note we explore how the twelve “megatrends”, identified by SAMI through its ongoing horizon scanning, will impact on these challenges.

The four Grand Challenges are:

- Putting the UK at the forefront of the artificial intelligence and data revolution
- Maximise the advantages for UK industry from the global shift to clean growth
- Become a world leader in shaping the future of mobility
- Harness the power of innovation to help meet the needs of an ageing society

SAMI identified twelve complex inter-related megatrends, and categorised them using a standard Social, Technological, Environmental and Economic/Political approach. Many of these are global trends and so may have varying levels of impact on the UK.





AI and the data revolution

Pervasive IT and the Internet of Things incorporating many more sensors will generate massive amounts of data. Big Data analytical tools will enhance our understanding, and machine learning/AI will come to respond and take decisions. Not only will developments spawn industries in their own right, they will radically change the structure of existing sectors, the pattern of employment and skills requirements. The UK has many existing strengths, in microelectronics, cybersecurity, games, VR/AR, and the Government plan to set up an “Office for AI” to help build on these. But this technological trend doesn’t exist in isolation. Some trends are supported and enhanced by AI and Big Data; others may have surprising outcomes. Developments in biotechnology will be significantly accelerated by such tools, the development of “smart” energy systems too, and one would expect economic growth will benefit as well. AI and IoT offer the prospect of better health care and support for an ageing population.

But depending how they are exploited within the economic system, there is the potential for increased inequality and significant job disruption (though new jobs may be created they are likely to be located in different places), challenging social cohesion, and potentially changing societal values. A Universal Basic Income has been suggested (even trialled) to address such disruption, but there remain significant problems with that concept.

The global trend to a multi-polar world means that many innovations in this field will not be made in the West, but in faster growth countries such as China and India. Different motivations and values will underpin these innovations, which may not be readily apparent when AI algorithms are doing the reasoning.

Clean growth

With the Paris Agreement looking to limit global warming to 1.5°C above pre-industrial levels, there is significant stimulus globally for growth in clean energy technologies. Various alternative energy sources are identified, though surprisingly perhaps solar isn’t touched on. Apart from the technologies themselves, and the links with AI and smart systems, perhaps the key megatrends affecting policies in this area are social cohesion and changing generational attitudes. The latter is likely to encourage the deployment of new technologies, while the former could be a challenge if austerity policies continue.

Mobility

The Government plans to build on the work of the Office for Low Emission Vehicles, the Transport Catapult, and the Centre for Connected and Autonomous Vehicles. It seeks to put in place enabling legislations which will see Autonomous Vehicles (AV) on the roads by 2021, though many practical challenges remain. The drivers of climate change and changing generational attitudes will stimulate the take-up of electric vehicles. Changing attitudes to asset ownership (the “sharing economy”) may underpin a move towards “mobility as a service”. Similarly, the boundaries between public and private transport could blur, as one can summon a shared vehicle. Many commentators assume that AVs will lead to more car sharing, but this is not inevitable as the “car” could remain “My” space – my mobile office or living room – in the same way that people personalise the interiors of their cars today.

An ageing population may be made more mobile by AVs and other transport innovations. Increasing urbanisation would be expected to put more pressure on city transport systems, so smart city solutions will become increasingly important. In



general, we can expect to see greater interaction between vehicles and the road network as a whole – eg AVs taking instructions from the centre as to which route to take to minimise congestion.

Biofuels, especially for marine transport, will become increasingly important.

Ageing population

The AI/data challenge and the mobility challenge will be major forces for providing innovative services to the ageing population. Biotechnology, with more gene-tailored medicine will also be powerful.

There are two distinct aspects of the challenge of an ageing population – health and finance. An ageing population need not necessarily be an increased burden on the health service. Improved health monitoring and treatments may enable people to live healthily for longer. Robotics can improve healthcare, though there could be an issue with their acceptance (conversely, some people may prefer intimate care to be done by a robot to avoid embarrassment).

Changing attitudes to healthy lifestyles will have an effect. Today's younger generation drink less and smoke less than their predecessors, so should have healthier outcomes; conversely, they suffer more obesity and diabetes, and mental health problems. The key issue overall is the proportion of people's lives when they are healthy.

Financial stresses will emerge unless there are changes to working lifetimes or perhaps the more radical UBI concept. The IMF projected in September 2006 that in Europe we will go from four workers per retiree to two workers per retiree by 2050.

What does this mean for you?

Both the opportunities from the Government's challenges, and the uncertainties of the megatrends will affect most organisations. If you would like to read our review of megatrends, or work through the implications for you, please contact us at 4GC@samiconsulting.co.uk

Written by Huw Williams, SAMI Principal, [published 9 May 2018](#).



Megatrends and how to survive them



“*Megatrends and how to survive them*” is the title of our book that is due to be published in November this year, by [Cambridge Scholars Publishing](#).

We have had so much fun writing it and had so many “aha” moments that we thought it would be good to share some of these insights with a wider audience before publication. A number of people have seen and commented on drafts and we will be acknowledging these as we develop the series of blogs, but first to acknowledge with many thanks the underpinning work done by the SAMI team over the years on horizon scanning and future trends, including but not only Jonathan Blanchard Smith, Martin Duckworth, Cathy Dunn, David Lye, Paul Moxey, Wendy Schultz and Huw Williams.

In this first blog we explore why we wrote this book. It is very different from the previous books that either of us have written on Scenario Planning or Strategic Foresight, which were for people who wanted tools to work with on thinking about the future. These books did discuss why and how people and organisations would benefit from thinking about the future and building this into strategy, but their titles did not encourage the casual reader or decision maker to pick up and read the book. We started to write for an audience outside the foresight community with “[Beyond Crisis](#)” (written with Oliver Sparrow), but though this was prescient in its thinking in 2009 about “there is no return to ‘Business as Usual’”, it did not reach a wide audience. We tried again with “Here be Dragons” which combines a novelette about an organisation trying to re-invent itself, with a handbook of the tools used at different stages during the project. We are often approached by people who have been given this book as a Christmas present and enjoyed it! Our aim was to make the books approachable, but we mostly connected with the converted; those who already were interested in using Foresight.

This new book arises from our discussions about how to empower real people – organisational leaders and line managers – with ideas about the future that can improve the quality of their decisions. Many of the foresight tools developed over the past decades have been targeted at enabling decision makers to challenge their current assumptions and world view, by creating images of qualitatively different



alternative possible futures. As we write, we see headlines overturning many of our assumptions almost daily. So, our current assumptions are already being challenged.

In working with a range of organisations, we have realised that a different approach is called for. This aims to reduce all-encompassing uncertainty – which is freezing decision making – by focusing on what we know with reasonable certainty about the future. There are a number of global megatrends sweeping the globe. Our message is: these megatrends are happening now, and you need to know how you can respond to them. Then you can face the current chaotic times and potential different emerging futures more confidently.

In working with groups, we focus on creating a timeline for a subset of these megatrends, such as population growth, economics, IT, biotechnology. We explore the timelines of the trends through increasing levels of uncertainty over time and analyse the forces that could accelerate or slow down their effects. By initially exploring the framework of forces and then exploring uncertainties and the risks from potential disruptors, the group experiences a lower level of fear, uncertainty and doubt, while encompassing a more realistic understanding of the limits of our capability to forecast the future.

In the next blog we will discuss the design of the book. It aims to support the ability of people and groups to think about the future. As one of our reviewers has said “I was very pleasantly surprised about how readable this book really is – it will make excellent reading for a wide audience especially anyone with an interest in the future of our beautiful planet. Readers will find the book’s statistics and projections give them an unfair advantage in a discussion about where it’s all going, down the line.”

Written by Patricia Lustig, SAMI Associate and MD, [LASA Insight](#), and Gill Ringland, SAMI Emeritus Fellow and Director, [Ethical Reading](#), [published 8 August 2018](#).



Megatrends – what are they and in what timescale?

This is the second blog based on the work we did writing *Megatrends and how to Survive Them*, which is due to be published by Cambridge Scholars Publishing in October this year.

In the first blog we explained why we wrote the book. As one of our reviewers said (better than we could), “I was very pleasantly surprised about how readable this book really is—it will make excellent reading for a wide audience especially anyone with an interest in the future of our beautiful planet. Readers will find the book’s statistics and projections give them an unfair advantage in a discussion about where it’s all going, down the line.”

We have chosen a timescale of 2032 for the trends we consider. We often hear people talking about 2050 or 2100 when they talk about the future. In that timescale some things that we haven’t put in this book, like maglevs under the sea, or commercial space travel and tourism or replicators (as in *Star Trek*) to 3D print our food could be possible. We are looking closer in time than that, so we can base our discussion on evidence, and make extrapolations. But why 2032?

The trends we discuss will continue beyond 2032, but we think 2032 makes a convenient reference point. We choose 2032 because based on current arrangements, 2032-33 will likely see elections for new Politburo Members in China, and a new President in the USA. So, 2032 could be an interesting year because there may well be changes of leadership emerging in both the USA and China. Much of the geopolitics of the next decade is likely to be dominated by these two powers.

In considering 2032, remember that a lot can happen in 14 years. Think back to what life was like in 2004....

For instance:

- This was before it was normal for family members to use videoconferencing between continents on a regular basis.
- 2004 was before Al Gore’s film, *An Inconvenient Truth*, which alerted large numbers of people to climate change.
- 2004 was before immigration from the Global South hit the headlines in the USA and Europe.

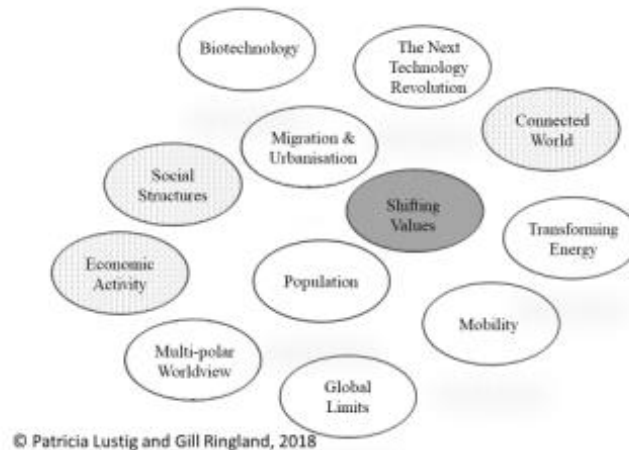
Now imagine the potential for similar changes going forward. There will definitely be some in the timescale we are working with.

The book focuses on 12 megatrends – global forces that are changing our world. This blog describes the structure we used for each chapter to explore the trend. But first perhaps some background to the trends – they have emerged from our work and the work of others in SAMI (and LASA) from projects, workshops and horizon scanning studies over the past few years. They are not independent, but we have found that groups – Boards, management teams, operational and functional teams – can quickly grasp the essential implications of 12 trends for their organisation or circumstance before focusing on a few, to manage the associated risks and opportunities. To help this we provide a summary of each trend on a page – with a few bullet points and a



diagram like this one showing interconnections of trends: this one shows that Shifting Values is particularly linked to Connected World, Social Structures and Economic Activity trends.

Figure 3-1 Related trends



The discussion of a trend in its chapter is then divided into headings that many readers may recognise as based on the ideas behind Three Horizons: Why this is important, How we got here, Current trends, Deflections we might see, How this might affect you by 2032, and a last section with a set of questions to help readers think in greater detail about how each trend might affect them in greater detail. These are: What does this mean for your business? People you work with? Customers? Products and services? Community? Networks?

Our reviewers found this easy to follow, and in addition liked that we not only considered global trends but also had a table in each chapter showing how the trend affected each global region. They also related to the early indicators – newspaper headlines you might see– that could indicate the direction a trend was taking. An earlier paper for Strategy & Leadership which described the use of early indicators with operational managers was among the most highly requested download ever! So clearly a useful way of helping people relate to potential futures.

We have been careful to “always look on the bright side of life” as well as consider downside implications of the trends – and this has been welcomed by one of our reviewers: “At any given point, we have the potential to move forward in both a positive and negative direction. The positive and the negative will co-exist forever, but the challenge we face is which one spreads across the greater part of the planet. I think laying out both interpretations of the trends really helps shape a more nuanced understanding. We need to be constantly vigilant about the possibility of negative trends being exacerbated, which is why this book could make an important contribution.”

Written by Patricia Lustig, SAMI Associate and MD, [LASA Insight](#), and Gill Ringland, SAMI Emeritus Fellow and Director, [Ethical Reading](#), published 22 August 2018.



Megatrends and how to survive them – Population

Megatrends and How to Survive Them is the title of our book that is due to be published in October this year, by Cambridge Scholars Publishing.

This is one of a series of blogs based on the work we have done for the book. In discussing the megatrends, we start with Population. This is because this trend drives most – if not all – of the others. The world population is still growing, although the rate of growth has slowed with some countries experiencing negative growth. Today’s growth is mainly in Asia and Africa.

When we explored this megatrend, we were helped by using the UN terminology popularised by **Hans Rosling** as Levels 1, 2, 3 and 4, for people’s living standards. A quick aide memoire for the living standards of each Level is:

Level	Billions	Dental hygiene
1	1	A person brushes their teeth with a finger or a stick
2	3	There will be one toothbrush for the whole family
3	2	Each family member will have their own toothbrush and they can probably afford a dentist
4	1	Each family member will have their own electric toothbrush, they will go to the dentist at least once a year

Levels 3 and 4 are often referred to as “middle class”. Today there are 3 billion “middle class” globally. It is this growth in the middle classes that drives all the other trends. When people get to level 3 or 4, they have the ability to exercise choice. Choice in what they buy, where they live, what work they do and how they do it, what they do for recreation and where.

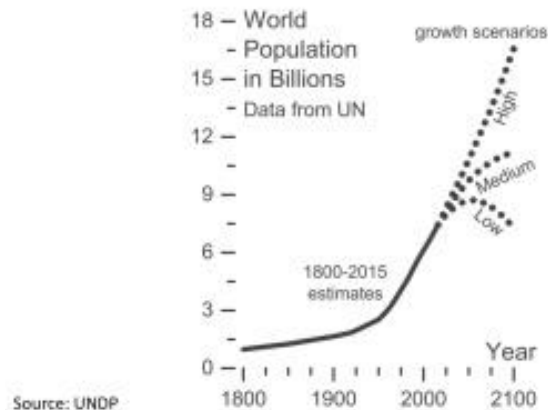
Population growth peaked (2%) between 1965 and 1970 and has declined to just over 1% between 2010-2015. It should decline yet further by 2032, despite rising longevity as the size of the age group of 65+ grows. A key risk to note is that the IMF projects that in Europe, the dependency ratio will go from four workers per retiree to two workers per retiree by 2050, while the median age in Europe will increase from 37.7 (2003) to 52.3 by 2050. What might your organisation need to do about this?

What surprises us is that up until quite recently, demographics has been mostly forecastable. But looking at the graph above, it becomes clear that today, we really have no idea what the population will be in 2100. That doesn’t take into account the deflections we could see, caused by war, catastrophic events and pandemics.

The opportunity that arises from improving health and the fact that more than half of us live in urban environments is that the education level of all is rising. This is especially important for women, because educating women leads to improved health and well-being, as well as a rise in life expectancy across the board.



Population



We continue our horizon scanning: some recent headlines that might be of interest are:

- *A growing **number of Americans over age 65 are filing for bankruptcy just to get by, and it could signal a larger problem in the US.***
- *State media in China boasted that their healthy life expectancy is now better than the US – and they're right.*
- *(Voracious consumption) x (rising population) = planetary crisis.*
- *More **migrant workers needed to offset ageing population, says IMF.***

Some questions you might like to consider, looking towards 2032:

- Thinking about population change in your country, how might your strategy and business model need to change in order to continue to be successful?
- Who do you think you will be selling to, and where will they be located?
- How might your product/service offering need to change.

We live in interesting times!

Written by Patricia Lustig, SAMI Associate and MD, *LASA Insight*, and Gill Ringland, SAMI Emeritus Fellow and Director, *Ethical Reading, published 14 September 2018.*

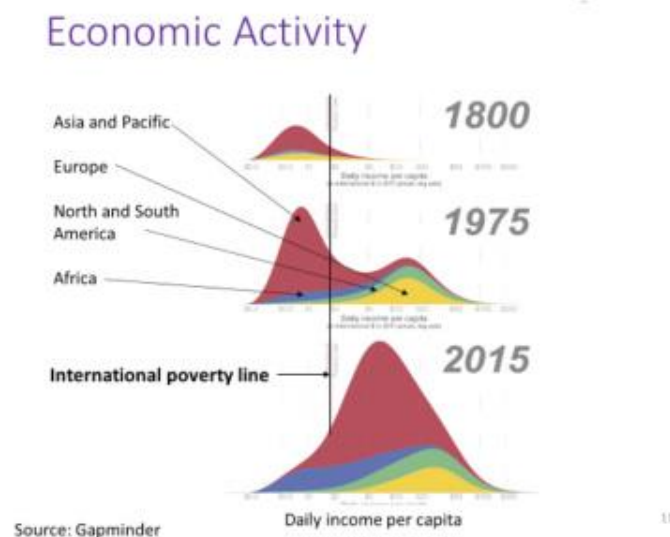


Megatrends and how to survive them – Shifting Values

“Megatrends and How to Survive Them” is the title of our book that is due to be published on November 1st, by Cambridge Scholars Publishing.

This is one of a series of blogs based on the work we have done for the book. We chose Shifting Values as a megatrend for a number of reasons:

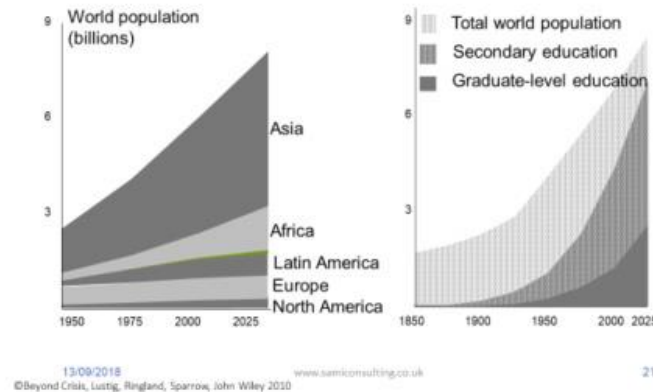
- Until relatively recently much of the global population was concerned with surviving wars, famine and plague. Wars are still present in some areas of the globe but affect fewer people than in previous generations. Famine is still a problem in localised areas, but more people are obese than are malnourished. And though there are ongoing concerns over pandemics, international responses have improved to head these off (cf response to most recent Ebola outbreak).
- Until recently much of the global population was poor. Again, the situation varies across the globe and within countries, but the figure shows how different the world is now from even 40 years ago.



- With this increase in wealth has come increased education. Literacy rates among women still lag behind that of men in some parts of the world, but overall, we can say that by 2025 there are expected to be more graduates than the total population in 1945, 2.5 billion. The second figure is from “Beyond Crisis: Achieving Renewal in a Turbulent World”:



Population & Education levels



“For the first time, the number of people in the middle class surpasses those living in poverty,” says World Bank President Jim Yong Kim. Putting these factors together, more people than ever before now have choices. They also now have a basis for making decisions about what is important to them.

Once basic needs are met, Maslow’s hierarchy suggests that people are motivated to look for ways of belonging, for esteem and self-actualisation. The emergence of a global middle class means that more people in all regions seek ways of realising these. This sometimes results in migration or may lead to new attitudes to their work/life balance or their role in society. It is this change in attitudes to work/life balance and role in society that we capture in the book under the heading of Shifting Values.

Generational differences are making themselves visible globally. Some differences between generations in different geographies are the result of history in that region, other differences result from the ubiquitous reach of ICT via TV, smart phones and the internet. There are already many similarities among globally. This is likely to be because there are more similarities between people who are middle class (regardless of which country they live in), than there are differences.

The key generational discontinuity seems to be that Millennials – born between 1980 and 2000 – think more globally and are more techno-savvy than previous generations. They worry about government policies and social inequality, lack of opportunity, and are willing to move countries and regions to better themselves. The **number one reason Millennials** leave organisations is due to lack of personal career opportunity within their parameters of work/life balance and job satisfaction. Millennials are exhibiting a shift from consumerism to shared experience: tourism, leisure and sport. There is also an increasing acceptance, in many regions, of aspects of sexual diversity e.g. trans, non-binary, and gender-fluidity.

Statistically, Millennials account for a quarter of the world’s population. They will make up three quarters of the global workforce by 2025. Generation X and Millennials outnumber traditionalists, those born before 1945, but they do not vote as consistently. This is sometimes because they have less of a sense of belonging, or less respect for the results of the democratic process.

The other shift in values, visible across generations is a wider interest in spiritual aspects – of self or others – sometimes expressed as religion, sometimes as mindfulness or wellbeing. Religion has, of course, been a source of divisiveness over the millennia, whereas mindfulness is inwardly focused. While in the global north, the influence of religion is in decline, this is not so in much of the global south.



Some questions you might like to consider, looking towards 2032:

- Thinking about shifting values in your country, how might your strategy and business model need to change in order to continue to be successful?
- Who do you think you will be selling to, and what are their values?
- How might your product/service offering need to change?

We live in interesting times!

*Written by Patricia Lustig, SAMI Associate and MD, **LASA Insight**, and Gill Ringland, SAMI Emeritus Fellow and Director, **Ethical Reading**, [published 4 October 2018](#).*



Megatrends and how to survive them – Migration and Urbanisation

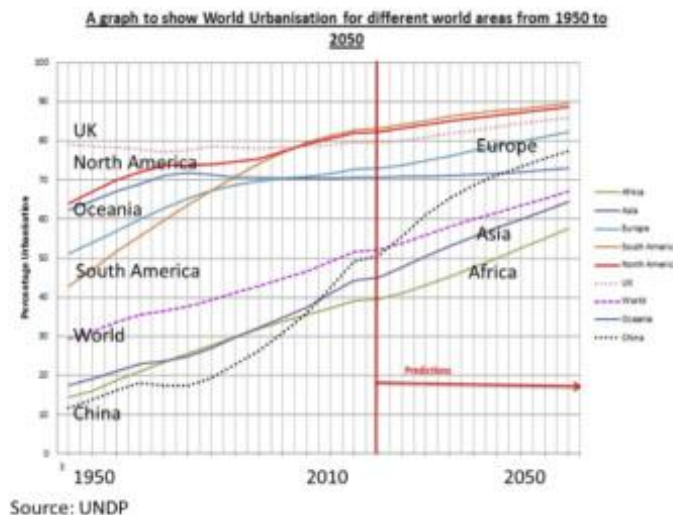
Megatrends and How to Survive Them is the title of our book that is due to be published on November 1st, by Cambridge Scholars Publishing.

This is one of a series of blogs based on the work we have done for the book. In it, the third Megatrend we explore is Migration and Urbanisation. We chose this because we now have more people living in urban areas than live in rural areas for the first time in history.

People migrate either because they are fleeing bad situations (the minority of migrants) or because they are aware there is a better life somewhere else and they choose to move to find it. About one percent of the world’s population is “an asylum seeker, internally displaced or a refugee”. However, as more people become middle class (see our blog on the first Megatrend, Population), they have the ability to make a choice about where they live. Most of you reading this are probably migrants: if you no longer live near where you were born, you, too, are a migrant. More than one in ten of us is a migrant, many from rural to urban areas within a country, or to another country.

In the 1950s the world population was around 2 billion and more than two thirds of people lived in rural areas. Today it is more than three times that and more people (roughly 4 billion of 7.6 billion) live in urban areas than rural.

Migration and urbanisation



As the figure shows, the trends are for Asia and Africa to become as urbanised as Europe and North America. Urbanisation is expected to continue while rural populations shrink. Many of the fastest growing urban areas are relatively small cities in Africa and Asia.

As jobs migrate to cities, their economies are also moving from being mainly manufacturing based to delivering services. Migration to cities leads to opportunity: the



growing diversity can feed creativity and innovation; it can also help countries with falling population levels care for the young, the ill and the elderly.

Today's growing cities face many challenges. Not just the obvious ones such as developing infrastructure to support the growth, but considering health, education, waste management, logistics of food supply and environmental change. Often little or no long-term planning is done: what planning is done is frequently for today and not considering what will be needed in the future. Many cities were designed for the times of our grandparents, not for today. To meet the future, cities will need to become Smart Cities: urban areas that use electronic data collection sensors to supply information to help them manage their resources and infrastructure more effectively and efficiently. This could improve the quality of life for their residents across buildings, mobility, infrastructure, public space, social and community programmes and civic governance.

Living in urban areas can have problems. With high accommodation costs, migrants and those with no employment or low wages congregate in poorer areas – which, in many cities means informal settlements, slums, shanty towns and run-down areas. These areas are usually not part of the urban planning if it exists, so they grow in a haphazard way lacking infrastructure, transport, safety, water and public services. High youth unemployment (where young males outnumber young females in informal settlements) is correlated to rising levels of crime and violence. When many people live together in small spaces, mental and physical health can be affected.

And of course, two-thirds of the cities in the world today are on coasts, vulnerable to flooding and sea level rise.

Some relevant articles:

- <https://www.raconteur.net/technology/the-city-in-2030> with some views of how a smart city will look
- <http://www.theafricareport.com/North-Africa/africas-15-richest-cities-in-2030.html> which these are likely to be.
- And for handling risks that can arise: https://www.ted.com/talks/robert_muggah_how_to_protect_fast_growing_cities_from_failing.

Some questions you might consider:

- How does urbanisation affect your market, products and services? How might you need to adapt them?
- How could urbanisation affect the people you work with? Will it make the skills you need easier to find?
- Where will you locate your business and where will the people you work with live and work?
- What opportunities might there be for developing new forms of social frameworks and support in both urban and rural areas?

We live in interesting times!

Written by Patricia Lustig, SAMI Associate and MD, ***LASA Insight***, and Gill Ringland, SAMI Emeritus Fellow and Director, ***Ethical Reading***, [published 17 October 2018](#).



Megatrends and how to survive them – Social structures

“Megatrends and How to Survive Them” is the title of our book published on 1st November this year, by **Cambridge Scholars Publishing**.

This is one of a series of blogs based on the work we have done for the book.

We chose Social Structures as a megatrend as we believe the changes in society are deep and long-lasting – a new paradigm will emerge:

- Until relatively recently family structures were typically wide and extended, with a number of children and few surviving grandparents and perhaps aunts and uncles. Now, globally, as marriage becomes less the norm, as women have fewer children, as people live longer, family units may well consist of one child, one parent, grandparents, and several great grandparents.
- As migration and urbanisation become the norm, new social structures replace those that have been in place for centuries – family members may be geographically remote, employment and work may be more transient, as may neighbours and community.

In addition to the trends of reduction in the number of children per woman, and the decrease in marriage, the increase in longevity is starting to cause stresses in society. This could cause shifts in attitudes to work in later life and the definition of social contribution to society.

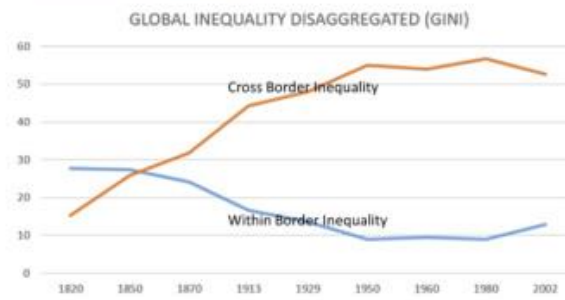
Some implications of the new family structures are:

- Single parent families will need more flexible working arrangements such as job shares and allowance for absence due to lack of backup.
- More work for those “of pensionable age”.
- As is found in China, one child families can result in people who find it difficult to be part of a group.
- Flexible working arrangements, and adapting to new family structures, may cause re-assignment of work and work locations.
- More allowance will need to be made for absence and presenteeism (present physically, but not mentally) due to illnesses both physical and mental.

The effect of these and other changes is reflected in the GINI index. The GINI index for a society is 100 if one person has all the wealth and the rest none, and it is 0 if everyone has equal wealth, so it is a measure of the gap between the rich and the poor.



Social structures



Source: Milanovic, 2009

What this shows is that since 1820, which was roughly the start of the industrial revolution, inequality between countries has shot up. This is because the industrialised countries got rich and other countries didn't. This gap has started to reduce as more countries industrialise.

Historically within many countries there was high inequality. Industrialisation reduced this, with the post World War II period being one of relative equality in most countries. But inequality within countries is increasing again. All the trends that we can see suggest that the directions of travel of both these graphs will continue: inequality between countries is reducing, and within countries increasing.

Inequality within countries – both real and perceived – is likely to continue and lead to civic unrest and increasing regional conflicts. This sense of inequality is fed by a number of factors:

- Increasing technological change (A.I., robots, etc.) alongside continued globalisation,
- Decline in labour market protection,
- Tax policies that benefit the wealthy.

Popular attention is likely to focus on unfair practices such as tax evasion and corruption.

Since health and social problems are worse in more unequal countries, the self-interest of organisations in improving low pay and working conditions would seem obvious. Not only would this benefit those less well-off but also those with more wealth.

Some questions you might like to consider, looking forward:

- Thinking about the new social structures, how might your strategy and business model need to change in order to continue to be successful?
- Who do you think you will be selling to, and what are networks and social structures?
- How might your product/service offering need to change?

We live in interesting times!

Written by Patricia Lustig, SAMI Associate and MD, [LASA Insight](#), and Gill Ringland, SAMI Emeritus Fellow and Director, [Ethical Reading](#), [published 7 November 2018](#).



Megatrends and how to survive them – Economic Activity

Megatrends and How to Survive Them is the title of our book published by Cambridge Scholars Publishing and available on [Amazon](#).

This is one of a series of blogs based on the work we have done for the book. We chose Economic Activity as a topic for discussion because the structure of much economic thinking is being challenged by the megatrends.

The economic megatrends are that economic growth will continue and the average GDPs of countries and regions will tend to converge. Growing returns to capital at the expense of labour means that multi-nationals will increasingly impact local economies, and that there will be growing inequality within countries.

The impact on economic thinking comes from (at least) three directions.

First, economist and social scientist Kenneth Boulding made the point that “The classical economic taxonomy of the factors of production into land, labour and capital is too heterogeneous to be useful; know-how, energy and materials are a much more useful taxonomy in understanding productive processes.”

Over the past decades, each of these has seen a substitution: of non-human for human sources of energy, automated control systems for humans as a source of process control, and the embodiment of knowledge and know-how in process plant, and equipment for knowledge and know-how embodied in production labour.

There has been a persistent trend to use mechanical energy from non-human sources in place of mechanical energy from human and animal sources. This substitution is approaching completion.

Second, almost every production process requires process control. Increasingly automated control systems are displacing humans as a source of process control, for example driverless vehicles. This substitution will continue to play out over the next few decades.

Over the next decade, almost every production process is informed by knowledge and know-how. Originally, the humans who did the work and provided process control, also provided the knowledge and know-how needed for production. Increasingly, the knowledge and know-how are embodied in the plant and equipment. The generation of knowledge and know-how is highly specialised and is easily replicated. This is the domain of the *Connected World* megatrend.

Together these substitutions, as they work out, have profound implications for human societies. As humans play a smaller and smaller role in production, payments for labour will not be adequate to be the main means for accessing the goods and services that can be produced. And, most of the value created in production will accrue to the owners of the process. They are then able to buy more, that, in turn, generates even more income. The result is that we are witnessing increasing concentrations of wealth globally. While the expansion of the middle classes in Asia is a dominant force for change in our timescale, the underlying structural factors mean that inequality of wealth and the nature and role of work represents an ongoing challenge for society and economic policy.



Doughnut economics



Source: based on Raworth, 2018

Third, in *Doughnut Economics*, Kate Raworth reminds us that economic growth was not at first, intended to signify wellbeing. Simon Kuznets, who standardised the measurement of growth, warned: “The welfare of a nation can scarcely be inferred from a measure of national income.” While economics in the 20th century took as its dominant model “rational economic man”, she argues that the aim of economic activity should be economies that “make us thrive...”

The central image in mainstream economics is the circular flow diagram. It depicts a closed flow of income cycling between households, businesses, banks, government and trade, operating in a social and ecological vacuum. Energy, materials, the natural world, human society, power, and the wealth we hold in common ... all are missing from the current economic model. Unpaid work is ignored, though no economy could function without it. Like “rational economic man”, this representation of economic activity bears little relationship to reality.

Raworth embeds the economy in the Earth’s systems and in society, including the flow of materials and energy. She also includes people as more than just workers, consumers and owners of capital. The resulting doughnut model consists of two rings. The inner ring of the doughnut represents a sufficiency of the resources we need to lead a good life: food, clean water, housing, sanitation, energy, education, healthcare, good government. Anyone living in the hole in the middle of the doughnut is in a state of deprivation. A billion people live in the hole in the middle (Level 1 on Hans Rosling’s categorisation in his book *Factfulness*).

The nature of the outer boundary is more fluid. We have breached the outer boundary in several places by using up resources faster than they can be replenished by the ecosystem. There is evidence to suggest that prosperous societies become more environmentally aware and better at protecting it, and that technology is finding ways to avoid the zero-sum game, e.g. renewable energy, biotech, and nanotech as an aid to recycling etc. As the population continues to increase and push up against resource limits, the world may need this type of integrative framework within which to set conventional growth measures and to add new economic measures.

For instance, some models start to build in the factor that many people now have choices and may not be driven by economic/financial factors in making decisions. This is a major challenge to many existing economic models. As people become wealthier, they may choose to spend their time in different ways, on no cost experiences, rather than driving for more wealth or accumulating more goods.



So, for leaders, the questions to ask themselves and their organisations could be:

- How does growing inequality of wealth affect your organisation, supply chain and customers?
- Do you assume that rational economic man is the dominant model? Have you tested this with people in your organisation and outside?

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We live in exciting times!

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