

HSE Scenario Project: A Virtue of Necessity

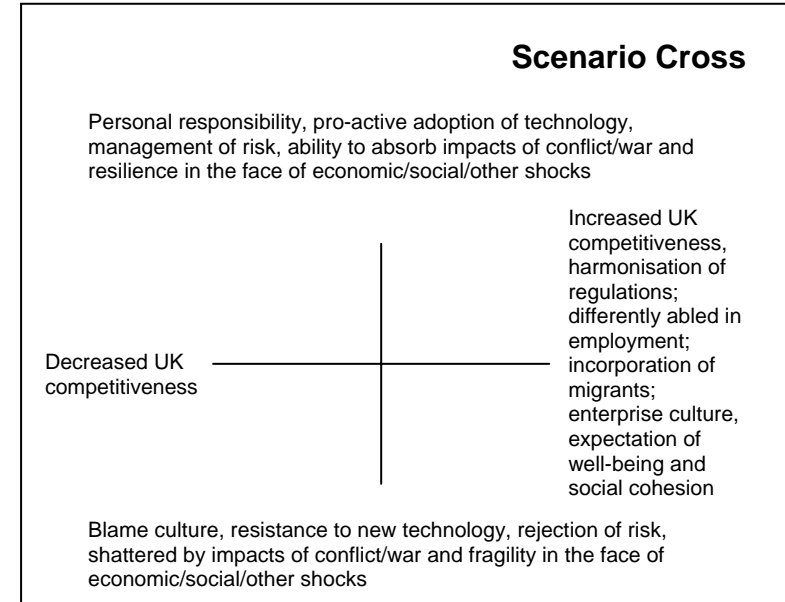
Introduction:

This scenario is one of a set of four comprising HSE's Scenarios for the Future of Health and Safety in 2017. The scenarios resulted from discussions and group work during a scenario-building workshop (20-21 July 2006) hosted by HSE's Horizon Scanning team as part of a wider scenario-planning project. Participants prioritised change issues and created the 'scenario cross' to the right that provided the logical framework for the four scenarios. The time horizon targeted was 2017. This scenario, 'A Virtue of Necessity', is driven by increased personal responsibility and increased risk tolerance combined with decreased UK competitiveness in the global political economy (illustrated lower right).

Scenarios are not predictions of the future - they are vivid stories about possible futures. They help us explore the boundaries of uncertainty defined by specified drivers of change. Scenarios written for interactive exercises are typically brief, depicted in personal rather than institutional anecdotes, and salted with humour (laughter aids impact and memory). But these are best based on research scenarios: longer narratives, depicted in broader terms. This research scenario for 'A Virtue of Necessity' begins with a brief overview of conditions in 2017 and the historical changes that created them. It then explores how life is different in this future in greater detail:¹

- What concepts, ideas and paradigms **define** the world around us?
- How do we **relate** to each other – what are the social structures and relationships that link people and organisations?
- How do we **connect** with each other - what technologies connect people, places and things?
- What are the processes and technologies through which we **create** goods and services?
- How do we **consume** goods and services – how do we acquire and use them?

The scenario finishes by focusing on the changing workplace, and changed health and safety issues.



A Virtue of Necessity

Personal responsibility, pro-active adoption of technology, management of risk, ability to absorb impacts of conflict/war and resilience in the face of economic/social/other shocks

Decreased UK competitiveness

These Scenarios were produced by Infinite Futures working with SAMI Consulting and the Health and Safety Laboratory. They are intended to stimulate thought and are in no way predictions of the future. They do not represent HSE views on how the future may develop.

‘A Virtue of Necessity’

Overview

As the 20th century ended, analysts wrote ‘2020’ forecasts, scenarios, and visions – for cities, provinces, and countries; for companies, agencies, and entire sectors; and for species, ecosystems, and planetary dynamics. From the vantage of 2017 – within hailing distance of 2020 –

Britain now resembles one great seaside town. More and more UK communities – even cities – consist of older people, needing services more than consumer goods. The local economy provides the services, and while goods are imported, consumers now buy for durability and extended use life. As traditional industries declined, young workers started emigrating and looking elsewhere for employment. With fewer people supporting more elderly and large corporations relocating to Asia, the economy contracted. Entrepreneurial activities are smaller in scope; more business initiatives are local, resulting in less wealth generation nationally.

The gap between ‘haves’ and ‘have-nots’ has widened. Society as a whole has looked for ways to re-trench. Increasingly, people are choosing to reject consumerism in favour of a shift towards increased self-sufficiency. Those who remain form, in one sense, more tightly knit communities, which are more focused on self-reliance than the communities of 2007. While this certainly means a gain for sustainability, it is more the self-reliance of the war garden than the eco-tribe. Nonetheless, the avalanche of data confirming global warming did accelerate the growth of

environmental values, as did social and business strategies pioneered by change organisations such as Clinton’s Global Initiatives in 2006.

People now take greater responsibility for their own well-being and for the well-being of their environment. What bodes well for a future revitalisation of UK competitiveness is a national mood of adventure: Britons are responding to the current challenges with resilience and creativity, working together to innovate and create new businesses and renew their communities.

Recent History (2007 – 2017)

2007: Outsourcing was a sensitive issue even before the millennium, but primarily for manufacturing. Even in 2007, many innovative industries were moving to cheaper locales. Others were relocating their research and development centres to the BRIC (Brazil, Russia, India and China) countries. This strategy offered the competitive advantage of a highly educated workforce available at a significant cost savings, given currency and cost of living differences. It also put production closer to the Chinese consumer. With the growth of distance learning, education centres began a similar relocation. Increasingly the best engineering and science schools came to be in Asia, as demand for science and technology degrees in the UK eroded.ⁱⁱ

As the decade progressed, it became clear UK businesses had insufficiently addressed the market opportunities emerging in Asia. While British businesses were strong in many sectors, other businesses were simply better. Emerging economies produced basic consumer goods more cheaply; South Korea and India were showing signs of outperforming the UK in both information hardware and software production.

2009: In a bid to increase both efficiency and sustainability, Government efforts to push conservation and recycling redoubled. The 25% recycling target was hit early, in 2009. Public opinion increasingly supported sustainability initiatives, but the growing self-interest in personal well-being and a comfortable environment seemed to erode entrepreneurial activities in 20th century industries. Public concern about climate change hit a new high with Britain's first cases of West Nile Virus. The government did respond effectively to the subsequent cluster of infections, and there were no fatalities, but the crisis did damage public confidence in their day-to-day environment as healthy.

2011: By the 2011 Parliamentary elections, more and more special interest parties were vying for seats. The political heat generated demonstrations, race riots and civil disobedience. Special interest groups lobbied to expand lifestyle pharmaceuticals as well, creating our modern 'super-athletes' with over the counter human performance enhancement regimes. In a surprise move for the usually conservative International Olympic Committee, the proposal for the first Human Performance Enhanced Olympics, mirroring the Paralympics, was passed.

2013: The heat generated by the 2011 election smoulders on, singeing UK and European business communities. The pound fell, imports soared and exports suffered. The spectre of stagflation, long thought to have been eradicated, loomed once more as the economy contracted, with only the economic success of the Olympics keeping that particular dragon at bay. Anti-regulatory feelings in business and industrial sectors surged. Special interest lobbying for the UK to pull out of the EU intensified. On a positive note, the Olympics also spurred a resurgence of interest in sports, fitness, and physical pursuits. Linked with the growing focus on personal wellness, this lifestyle shift put paid to the obesity epidemic.

2015: Duty on biofuels was removed as public concern on climate change continued to spiral – and in a related development, Britain's environmental campaigners won their first seats in Parliament. More hotspots erupted on the global stage; in response to the social dislocation and conflict in the Caucasus, calls grew for the introduction of compulsory one-year public service for young adults, in either a military support or humanitarian capacity.

2017: The UK begins its move into the experience economy with a focus on the technologies and activities of wellness. British inventors create breakthroughs in embedded computing (human-machine interface) and augmented cognition; bionic heart components; and human performance enhancement biochemicals. British designers leverage the UK's diverse cultural heritage and environmental richness in

a green approach to sustainability and health: aesthetic asceticism.

In-Depth Exploration

Define: *what concepts, ideas, paradigms, and values define this world?*

People focus more on quality of life, on both individual and environmental levels. Achieving and maintaining that quality is widely considered a matter of personal responsibility; the challenge is at once too personal and local, and too complex and pervasive for governments to address effectively. Rather than relying on the government as their trusted agent, individuals rely on themselves.ⁱⁱⁱ But not themselves alone; people have internalised the paradigms of self-organising complexity and open source communities from 21st century science and software. Organising support groups, political action groups, and necessary resources – whether locally, nationally, or globally – is simple reflex.

And it's a necessary reflex, as too many people scramble to make ends meet. The scarcity mindset fused with environmental concerns in a backlash against the throwaway consumer culture. People are making do with “reduce, reuse, recycle,” a worldview made efficient and even sociable with eBay and Freecycle. It's the new war garden in the global economic and environmental battle zone. This shift is sufficiently pervasive that planned obsolescence may become illegal by 2020, not merely a target of consumer ire. Every new stream of environmental data supports the

necessity of sustainable living. The current economic constraints merely underline that.

Relate: *how do people relate to each other – what are the social structures and relationships that link people and organisations?*

Government resources are pressured by ageing, of both the populace and the infrastructure. Taxes have risen in the last decade, but with a slack economy, the revenue pie hasn't kept pace with crises. Both national agencies and local authorities struggle to reprioritise among equally critical needs. Research and development funds were shifted to prop up pension funds; educational and youth programs lost out to senior care. An increased sense of personal and community responsibility replaced the ‘anti-hoody’ and ASBO campaigns of ten years ago with a technologically-enhanced, socially networked version of ‘neighbourhood watch’. While a saving for government, the downside is unequal community security, as wealthier neighbourhoods hire private security companies, as well as a disquieting emergence of vigilantism. The latter has also contributed to the increase in fringe political groups capturing Parliamentary seats.

Global relationships have re-focussed: The Pacific Era dawned in the 2010s. India, China, South Korea, Singapore and other Asian countries are the new gravity wells of the global economy, and of global geopolitics as well. British businesses are still playing catch-up in Asian markets vis-à-vis other Western economies, after starting too slowly off the

block. In 2017 the UK is not globally competitive either in the industrial, service, or information sectors. Britain's economic revival is, instead, being built by experience economy entrepreneurs focused on mind/body/spirit products and services for the high-tech, high-touch consumers of 2020.

Britain's ageing **society** is an unbalanced society. The younger generation are serfs to their seniors, not only in tax support, but in direct income contributions as well. In the current climate of economic uncertainty, young adults head into maturity saddled with educational and consumer debt. And not merely financial debts: many carry a 'health debt' generated by the stress of caring for their parents and working multiple jobs to cover expenses. The emerging youth drain to Asia comes as no surprise, as young workers opt for higher paying jobs overseas. It takes them away from their families, but they rationalise that the enhanced financial support they can offer balances their absence.

With the youth drain taking a significant percentage of the skilled under-forties overseas, more OAPs are organising self-help and support networks. Elder volunteerism is growing, which has the double benefit of providing local communities a volunteer pool of experienced labour, and also keeping the elderly active and socially engaged.

In short, in the last decade the British **family** has both imploded and exploded. Taking personal responsibility for the well-being of their parents and relatives has pushed some families into more cohesive, close-knit structures that are in turn tied more closely into local social and community

networks. On the other hand, some families have 'exploded', going global, with younger members tracking economic hotspots internationally. Even these families, however, remain virtually tight-knit, with family intranets featuring private web-cams and ambient health sensors enabling kids to keep a constant eye on their parents' well-being – and vice versa.

Connect: *how do we connect with each other - what technologies connect people, places, and things?*

Little distinction exists now between media and personal communications, between a cell phone, an Internet terminal, and a home theatre. The pervasive global wifi mesh of ubiquitous computing means that one Chinese schoolgirl's videoblog mash up of live concert footage, original animation, and cell-phone-captured commentary is a UK viewer's indie documentary. Expat workers overseas can catch the global and Mumbai evening news roundup over dinner, seamlessly intercut with live webcam footage of Mum and Grandma having lunch in the garden in Buxton.

Cheap, widely available sensor tags and buttons are linked to wifi networks. Home health monitoring – your body and your life as a bioscience project – is becoming common. The growth in home health telemedicine has been a boon for those who can afford the system. It reduces costs and increases the sense of security for the elderly wishing to extend their independence. These systems also provide home environmental telemonitoring, enabling homeowners to monitor not just environmental conditions – air quality and

contamination, water quality, local allergen count, and UV conditions – but also levels of resource use in their homes. Homeowners can micro-manage their ecological footprint on a daily, hourly, or minute-by-minute basis.

The same sensor tags have increased the sense of community security, as more neighbourhoods use them to monitor suspected local ne'er-do-wells. Inevitably, this ASBO replacement has spawned an underground market in sensor tag hacking.

Create: *what are the processes and technologies through which we create goods and services?*

The post-recession **economy** of 2017 features fewer jobs and higher unemployment. Labour is shifting into new sectors – and emigrating to the Asian economic nexus. This creates a vicious circle; as British companies lose skilled labour locally, they outsource innovation and production to Asia as well. The more companies locate their exciting jobs overseas, the more skilled workers look overseas for positions – where they compete against often better-educated foreign workers.

British entrepreneurs have turned to the experience economy to revitalise growth. New ventures combine the strengths of those historical resources that support UK tourism – and UK film and theatre – with Britain's aesthetic strengths in arts and design. Small business owners have focussed on the new growth market for green mind/body/spirit products, catering to the heightened interest

in personal wellness. Retreats, spa breaks, and 'whole person' life management classes integrate not only eco-friendly health products, but also regional organic specialty foods. Locally unique and sustainable 'neo-crafts' fit well with tourism and the culture trade. As local production contributes to their intrinsic value, these businesses cannot by definition be outsourced. These emerging signs of economic revitalisation are promising, but the local eco-wellness sector is limited by its strength as a community-based activity. It remains too small to replace the industrial sector income Britain has lost.

Larger initiatives are emerging where green responsibility links to high technology. UK venture capital has supported local design of 'smart environment' whole health systems. These apply self-organising system designs to pervasive sensor networks that link home health monitoring systems with mobile heart/stress monitors and work environment monitors. This immersive 'wellness web' allows employees and small businesses to work together to ensure worker health from home to office and back again.

Consume: *how do we consume goods and services – how do we acquire and use them?*

Britons are consuming less per person with each passing year. 2017 may go on record as the year the throwaway culture ended. People try to make the most of all their belongings, encouraging manufacturers to stress easy repair and the hardware equivalent of 'mash ups' - mix and match appliance components. This trend has made eBay and

Freecycle more popular than many high street chains. People are also literally consuming less: the obesity epidemic has peaked. The immersive media exposure to the exhilaration of fitness exemplified by Olympic athletes helped. In addition, the new HPE Olympics publicly demonstrated the human performance innovations that can aid willpower alone in helping individuals achieve that 'new svelte you'. Finally, rising environmental awareness made consumers not only more likely to ask what was in food, but also to ask what the environmental and social consequences of food production were. The Oxfam 'compare these dinners' ad campaign for their continuing work in famine-prone African regions resonated with many, especially after Sir Jamie Oliver's riveting special broadcast underlining the problem.

Water shortages are much less common. Enhanced environmental awareness means greater care in water usage at the tap. It also produced a special interest group that pressured the government to raise fines for water utilities that allowed more than 5% system leakage to continue more than three months. Parsimony is all in basic resource use. Consumers are also supporting a new scheme to tap the more than 300 years' worth of coal still underground via gasification, which does not require miners. Biofuels have seen explosive growth since the catalyst innovations earlier in the decade; alternative fuels are displacing petrol in personal transport.

Focus on the Changing Workplace

Britain has fewer large industries and large corporations that standardise office practices and environments throughout their branches. The proliferation of small businesses, local businesses, and at-home businesses creates widely varying work environments. The line between work and home continues to erode. The increased value placed on achieving work/life balance is countered by labour needs and many people's need to work two jobs, or one job in conjunction with elder care or self-sufficiency tasks. Work at home allows more seamless integration of elder care, but it also lowers productivity due to the distraction quotient.

One emerging reason for optimism, however, is the increasing trend for small businesses to share office space and support staff, leveraging dynamically administered resources to function more efficiently and parsimoniously.^{iv} Implementing 'green office' design is also easier when resources are shared. Less waste and lower operating costs allow these office cooperatives to invest more in creating a healthy workplace environment.

Health and Safety

With regard to health and safety, fear and uncertainty have driven people to think, "If I don't do it for myself, no-one else will do it for me." It's a brave new world of personal responsibility, driven as much by galloping technological progress as from any increase in individual or social enlightenment. Detection and prevention of ill-health causal

factors is the key. Health agencies are moving into the roles of coaches and advisors. They provide resources that enable people to take responsibility for their own well-being more effectively.

Immersive monitoring systems and 'wellness webs' allow more efficient monitoring of health and stress indicators throughout an individual's day. Businesses and employees who can afford the system find that it not only aids productivity, but also reduces employee health costs. As a result, the bell curve of workplace health and safety has widened and flattened; we see more exemplary practices, but also more reports of small businesses attempting to fly under the regulatory radar to save costs.

Many businesses have simply cut and run. Recession-induced pressures on profit margins increased the offshoring of innovation, R&D, and production by those who could afford it. This was welcomed by some environmental campaign groups, though by no means all, as a means of protecting Britain's natural environment from experimental or industrial disasters. The sluggish economy did create some bargains for overseas buyers, with British companies going cheaply. However, their new overseas owners tended to bring their own attitudes and approaches to health and safety issues. In some sectors this mattered little; in others, a lot.

Winners and Losers

The winners in 2017 are the self-sufficient, high-tech, green micro-energy producers and consumers in the wealthier rural communities. Landowners in those communities have benefited from the increased demand for land for the self-sufficient lifestyle. Pensioners who can afford the supportive technology are better off, as are those who belong to support networks or have either successful or devoted children on whom they can rely. Private security companies are succeeding, as are small businesses developing wellness products or services, especially those that are locally unique. Digital media and experience economy entrepreneurs are beginning to re-establish a name for British design. In politics, proportional representation has created a lively, if fragmented arena for special interest groups – and political extremists.

But the losers are too often the young and working age adults, especially those with minimal education whose traditional industrial jobs are disappearing. Pensioners whose children emigrate and who lack the resources or support networks suffer from the erosion of public assistance. While 2017 contains the potential for new growth, it is still for too many an era of struggle.

References and Resources:

Foresight and scenarios resources which offer confirming evidence and insights for the HSE scenarios:

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- The Workplace Intelligence Unit / DTI, “The Future of Work” scenarios, available at: http://www.workplaceintelligence.co.uk/uploads/files/dti_future_of_work.pdf (accessed 15 September 2006).

ⁱ This organisational scheme is adapted from Global Foresight Associates’ “EthnoFutures Scanning Framework,” devised by Michelle Bowman and Kaipo Lum. This framework proposes organising scan data based on its point of impact on society, rather than on the origin point of the change. See Michelle Bowman and Wendy Schultz, “Best Practices in Environmental Scanning: The World Beyond Steep,” presentation at the World Future Society, Chicago, 30 July 2005.

ⁱⁱ Sir Gareth Roberts, “SET for Success,” available at: http://www.hm-treasury.gov.uk/documents/enterprise_and_productivity/research_and_enterprise/ent_res_roberts.cfm (accessed 15 September 2006).

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ⁱⁱⁱ Institute for the Future, “Map of the Decade 2003.”

^{iv} Orange Future Enterprise Coalition, “Scenarios of Work and Technology in 2016: Scenario 4: Mutual Worlds,” p. 11.