

## HSE Scenario Project: Boom and Blame

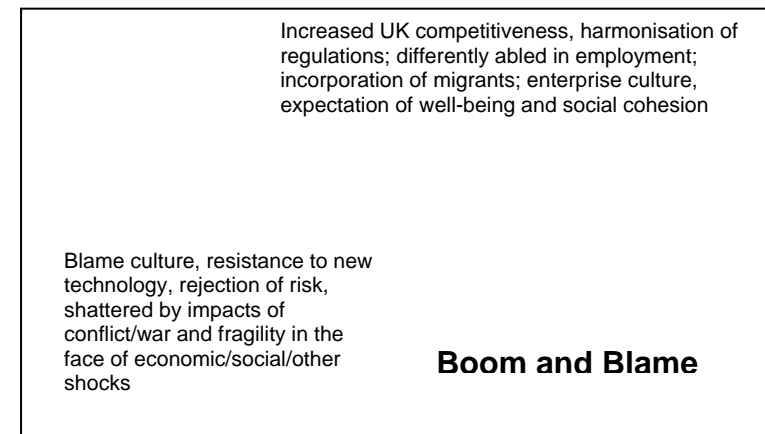
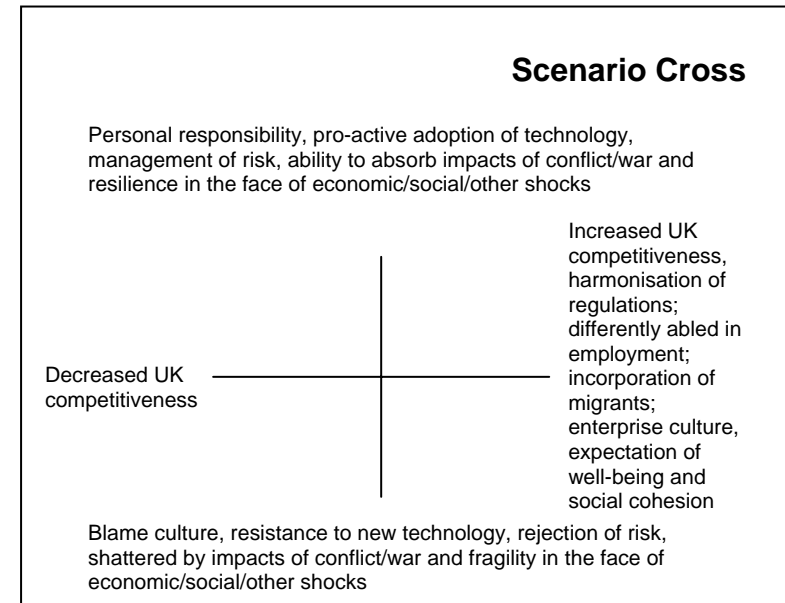
### Introduction:

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 four scenarios. The time horizon targeted was 2017. This scenario, 'Boom and Blame', is driven by decreased personal responsibility – a 'blame culture' – and decreased risk tolerance combined with increased UK competitiveness in the global political economy.

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. The research scenario for 'Boom and Blame' begins with a brief overview of conditions in 2017 and the historical changes which created them. It then explores how life is different in this future in greater detail:<sup>1</sup>

- 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.



*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.*

## 'Boom and Blame'

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### Overview

*As the 20<sup>th</sup> 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 –*

The global economy of 2017 is a dog-eat-dog arena. In the UK privatisation is up, and the market is free. Britain has a history of economic success and is relatively strong today, but how stable is that strength? People are worried about the future. What compounds the worry is the cost to the environment of maintaining economic vitality. Remember sustainability? It has taken a back seat to aggressive growth strategies, among them the loosening of environmental and health regulations. Companies are offshoring production to reduce costs. They are also offshoring waste to minimise disposal and remediation expenses. While British investors are moving aggressively into emerging markets, foreign investors are snatching up vulnerable UK companies.

Society prizes competition and assertiveness. Economic and social pressures to enhance business productivity mean that business owners have a vested interest in the wellness of employees. Companies now genetically profile prospective employees as a matter of course, and provide subcutaneous RFID wellness/environment sensors to assist employees in maintaining peak health and peak productivity. The economic value of proving 'clean genes' has produced a new extended family as a knock-on effect; genealogy has

become popular, and relatives who find each other using online genealogy software often meet to discuss medical histories and stay to socialise.

The public mood is increasingly laissez-faire. Government is expected to be less intrusive in the business sector and less intrusive in private lives. The corollary is erosion of social safety nets. Influential commentators are focusing in on what they see as an ever-polarised society, with privileged enclaves and ghettoised communities. But the tide of communitarianism, long in ebb, seems to be rising; more voters are voicing dissatisfaction with rising crime and the growing indigent population.

### Recent History (2007 – 2017)

**2009:** Trust between economic partners begins to unravel as several EU member states opt for 'associate member' status; the extra pressures on the Euro see the British pound soar. Cheap holidays are offset by ever-louder roars from the beast of inflation, still caged but rattling the bars with ever increasing vigour.

**2011:** On 22 November 2011, the ban on using genetic information expired, and insurers competed fiercely for ownership of genetic databases. Access to genetic profiles of insurance customers radically changed the insurance model; insurance became much cheaper for some, more expensive for most, and unobtainable for the few.<sup>ii</sup>

**2013:** The erosion of multi-lateralism continued in the early part of this decade as some EU members opted for membership of the North American Free Trade Agreement. Cooperation definitely lost out to competition internationally as the emerging economies scrambled for ever-scarcer resources against the established economies.

This competition for resources impacted on all. The 'water tax' was applied to those without water meters. New duties on cars fuelled by solely by petrol were introduced. And car tax was fixed according to both miles travelled and time of travel. Hitch-hikers reappeared at Britain's slip roads. Many risked stopping to give them a lift - the expectation was that they would contribute to the cost of fuel; it wasn't uncommon to pick up someone en route to a business meeting.

The skills of hackers and cyber-attackers reached new heights. A consortium announced millions in cash prizes for anyone able to devise a foolproof means to 'track the hack' following the 'FTSE 100 Blackout' of 21 July 2013. This cut electricity to the UK's top 100 companies, stopping production lines and overheating insufficiently air-conditioned server farms, with knock-on impacts on over 1,000 subsidiary firms.

**2015:** A consortium of UK companies sponsored the 'Worker Wellness Headstart' programme, offering financial incentives for parents in their employ to have babies genetically profiled at birth. Social analysts commented that this might create a 'new aristocracy' of those families whose genetic evaluations indicate consistently good health.

In a related story, the same consortium's 'Worker Wellness Now' programme met with runaway success. This initiative offered an information pack and HR staff training for companies wishing to implant employees with subcutaneous RFID sensors to monitor environmental stressors, health, and productivity. Originally, employees were offered incentives for adopting the implants. They are now seen as luxury benefits; all personal health technologies are valued.

**2017:** In early February, over 1,200 senior managers in companies across the UK took ill. The 'Executive Epidemic' was finally traced to infected RFID implants.

### In-Depth Exploration

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

21<sup>st</sup> Century Britain has unleashed the market. Competition is the primary value, and economic apex predators are widely admired. Privatisation is considered the most effective model to achieve organisational efficiencies. When done right, of course; it is acknowledged that some of the 20<sup>th</sup> century privatisation experiments had serious structural flaws. In 2017 the ideal organisation has a lean balance sheet, and externalises costs as an explicit strategy. Corporate social responsibility now means how much a business has contributed to enriching the nation as a whole, its immediate environs, and its stockholders.

People do acknowledge the real challenges the world faces. The ten straight years of increasingly warm Septembers illustrated the growing impacts of climate change. The private sector has simply concluded that addressing such a massive problem requires generating income on a massive scale. Fixing big problems costs big money. Consequently, maintaining the UK's economic vitality is a priority.

The contradiction built into this worldview is still a point of public debate; keeping costs low to increase profits inevitably generates a tragedy of the commons that amplifies the environmental problems people are generating wealth to solve. The backlash has encouraged a militant environmentalist fifth column.

Society values education more than ever – and competitive sports (for the mindset). Both are seen as essential to maintaining Britain in the forefront of the world economy. Chronic underinvestment in education means that over 85% of large corporations offer not just in-house training, but in-house schooling. Most of these corporations are lobbying the government to renovate the national education system: this is not a cost they want to bear indefinitely.

Concepts of equality have shifted. People no longer talk about inequality relating to race/disability/age, and the gender balance has now shifted in favour of women. Inequality is primarily due to health/genetic predispositions. In keeping with public expectations, the Government has refused to legislate on this.

Attitudes towards immigration have also changed, as skilled workers in the manufacturing sector are forced to emigrate in search of work. Immigrants with good health profiles are welcomed.

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

**Government** in 2017 is much less intrusive. While good for business, that stance is believed to generate social crises. Safety nets for the unemployed and under-employed, the elderly and children have eroded over the past decade. Discontent is rising over the extent to which this creates mini-humanitarian disasters in pockets throughout Britain.

The UK has supported free trade within trade blocks and EU protectionism. The European Commission has lost much of its power. The way forward for the 'new Europe' of the post World War Two years now seems very unclear.

**Globally**, the free market continues to throw sparks. People caught on the wrong side of the global wealth divide have moved beyond simmering resentment to explosive anger and matching militancy. The resource divide, exemplified by global water shortages, exacerbates this. Strategic alliances with organised cyber-crime allow hackers to cause global disruption via digital networks.

**Society** is more divided. Prizing competition legitimises the wealthy and recreates the Victorian notion of the 'undeserving poor'. Urban architecture enshrines the

'success' gap in the fortified garden walls of privileged enclaves and the blasted commons of the new ghettos.

Consolidation of the British economy around traditional knowledge economy and experience economy sectors – finances, business services, technical expertise, and tourism – has widened the 'success gap'. Manufacturing jobs are disappearing and the job market increasingly demands advanced education. Industrial skills have lost value, and fiscal wizardry, strategic research, and technical understanding are the order of the day. The **labour** market has polarised between high-level knowledge jobs and low-level service jobs. Skilled blue-collar workers are looking abroad for positions and Britain is losing labour to emigration. The increased employment and retention of older workers has closed out job opportunities for the young. Society is labour rich, but increasingly skills poor in expertise critical for the knowledge economy.

Girls continued to outperform boys in schools, and with greater academic achievements became more sought after in the workplace. The focus of employers on education and knowledge left many young men at a disadvantage in the jobs market and unemployment within this group has risen.

Women also continue to live longer than men. In an economy reliant on older workers, this means young female workers are replacing employees who die in post, resulting in businesses dominated by women.

As unemployment rose among young men, so did resentment, crime and urban unrest characterised by a

burgeoning gang culture. Employers are increasingly reluctant to employ young men whose postcode reveals a 'certain' area. The government has proposed compulsory national 'gap year' service as a possible solution.

Employers genetically profile employees as a matter of course. Genealogy has boomed as a result. **Families** are investing time and money in tracing all the branches of their family tree. Far-flung relatives meet to map their health profiles and socialise, revitalising the extended family for very 21<sup>st</sup> century reasons. People who want children pay more attention to DNA profiles and combinatorics in choosing spouses.

Global climate change is visibly etched on the **environment**. Summers are warmer and longer, and heat waves more common. Coasts and estuaries suffer from more, and more extreme, storms. Flooding patterns have changed and redrawn the risk map for construction. Building regulations have been adjusted as a result. Unfortunately, more water from storms often means less water to drink as seawater intrudes on water tables. Pollution levels are also higher in the wake of government deregulation and looser controls.

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

Competition in the 24/7/365 economy requires ubiquitous computing. The pervasive, 'always on' telecoms/computer net creates an immersive, round-the-clock work environment. To help employees manage stress and

maintain health in this turbo-charged atmosphere, companies distribute 'digital burrs' – small RFID sensors that attach to clothes, hair, or equipment to monitor health, environmental factors, and safety.<sup>iii</sup> They connect to corporate HR systems, insurance databases, and what remains of the public A&E response infrastructure. Larger companies require subcutaneous sensor implants during the full tenure of employment.<sup>iv</sup>

The most popular social networking programs of this decade are genealogical search-and-chat communities. The most sought-after luxury business software is a digital clone, which stands between the user and this high-stress immersive environment, filtering data-streams for the highest-priority input.

There has been a reversal of the trend to live far from the workplace because of longer working hours, security concerns and fuel costs. Transport companies deliver improvements for short-distance trains (within the 'have' enclaves at least). Journey times are drastically cut and delays for commuters become a thing of the past (people do not want to waste a second of their time).

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

In global terms, the UK is a fast adopter and innovator. Business is booming in finances, business services, technical expertise, and tourism. Foreign ownership among the FTSE 100 companies has increased over the last decade. The government works to enhance this competitive

edge through an ever-light regulatory touch; reducing taxes on fuels and privatising services. Business is contributing too through taking up the slack to tighten the skills gap; in-house training has become in-house schooling; educational programs are now common in large businesses.

The intense focus on cyber-security has hobbled open source communities and peer-produced software. 'Mash up' media are all but interdicted; business has demanded much more stringent and comprehensive prosecution of data and media piracy.

White goods and small consumer goods are imported. 'Made in the UK' now applies primarily to services and ephemera. Enterprises are larger. Successful small companies grow; unsuccessful small companies are absorbed by larger enterprises. The trend of neighbourhood 'mom and pop' storefronts disappearing continued. Looking at tourism as an example, hotel chains are buying up local B&B's to create national B&B brands. They have homogenised the guesthouse experience in service to economies of scale and in aid of raising quality standards. Some small enterprises achieve efficiency while maintaining a unique brand via consortia agreements with similar businesses.

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

High street shops are suffering: the employed have not enough time to shop for non-essential goods, and the unemployed not enough money. In response, more and

more retailers use their brick-and-mortar shops as displays for merchandise that is actually sold on line (“Window shop and then shop on Windows Internet Explorer”). Another popular strategy is the ‘express shop’ – store redesigns aimed at ten-minute turnover of customers with a purchase. These rely on databases with customer sizes, preferences, and previous purchases interlinked with financial data. Chip readers in doors recognise the customer and relay their data to the nearest available salesperson’s datapad. This allows the sales staff to link customer requests to available preferred stock in seconds. With size (including height, weight, and measurements)<sup>v</sup> already correlated to the item, people don’t even try clothing on anymore.<sup>vi</sup>

There has been growth in personal physical security services too, as a result of polarisation of society and increasing militancy of the ‘have-nots’. Security is no longer something that the government provides, so the market for this is growing (both in terms of new technologies and security guards). Sometimes this is provided by employers, but generally it is something that individuals need to procure for themselves. Services are acquired from one of the major security providers, who ensure quality and vetting of staff.

With regard to environmentalism and resource use, the anti-carbon lobby won. Britain has built more nuclear power plants to assure domestic electrical supply. Subsidies on biofuels have reduced fuel prices, making goods transport less expensive. More cars are on the roads, although many corporate workers use public transport because they can continue working on the way in or out of the office. Other public environmental initiatives must now operate in the

black. Community recycling programs still exist, but are now taxed to cover operating costs.

### **Focus on the Changing Workplace**

Manufacturing has mostly been outsourced and offshored. The workplace today is the office more than the factory floor. This considerably reduces worries about major workplace hazards. Where businesses have consolidated, the work environments are standardised for the sake of efficiency of supply and training. But shifts are longer; pressure to produce keeps workers at their desks well into the evening.

At first corporate genetic profiling was used to identify workers particularly sensitive to chemicals and substances used in innovative materials production. The increasing sophistication of genomic analysis allowed companies to evaluate candidates’ fit to corporate culture in terms of metabolism, personality, and vulnerability to stress. Genomic evaluation has created new social gaps as screening for health and longevity is used for insurance, pension schemes, and benefits, all adjusted according to people’s expected lifespan.

These screening programs are the first step in corporate HR support for the use of human performance enhancement drugs and technologies by employees. Company cafes offer an array of sanctioned HPE drugs, and corporate training includes instruction in their use. It also includes instruction in using RFID/nano health sensors to monitor productivity, environmental stressors, metabolism, and overall health. Monitoring and screening employees’ behaviour and health

at work and at home lets the HR team monitor staff productivity. It's all about additional competitive edge. ("Maintaining productivity is a 24/7/365 endeavour!")

But issues of trust, privacy, and liability are still rife, and the tightest corporate cyber-security can be found firewalling the HR health sensor nets. Initially employees accepted intrusive 'chipping' because in a buyers' market for labour they had little choice. Of course, there were also economic incentives in the form of reduced insurance premiums and a higher salary scale. Most people now acknowledge the physical benefits.

The sensors do actually improve health maintenance. They are designed to be preventative, focused on enhancing well-being. Personal sensors have become a luxury the 'haves' wished they had – and the 'haves' wished they had control over. People rely on chips to monitor their health, which distances responsibility for health and environmental risks from individuals themselves.

Life has lost to work in the battle for work/life balance. Pervasive computing allows work almost anywhere, but corporate security and privacy concerns mean most employees still work in the office, where greater security can be assured. This produces staggered rush hour traffic, and shifts it to a band between 8 and 10 pm.

More competition among companies means more competition within companies; employees battle for higher paying positions and suffer higher stress as a result.

Corporations and businesses are cutting back on worker amenities, although so far productivity concerns have preserved health-related perks like company fitness centres.

## Health and Safety Issues

In FTSE 100 companies, employers view worker health and fitness as a strategic resource ensuring high productivity. Successful employees guard their health as a resource with concrete salary implications. These perspectives render genetic profiling and subcutaneous RFID health sensors non-controversial. In free market conditions, the insurance industry drives health and safety, spurred on by litigation. Consumer health issues and public safety are as big a priority as workplace safety.

The concept of sensible risk is now forgotten. With genetic profiling and the power of insurance companies, people and organisations are seeking more and more control. Risk assessment is replaced by risk prevention, as the higher end of society (i.e. the 'haves') demands all risks are stamped out as soon as they materialise.

Stress is the top health issue among the employed. Worsening air quality coupled with stress-depressed immune systems has caused a resurgence in respiratory infections.

Obesity is on the decline among the 'haves', more because it is perceived as unproductive and uncompetitive than specifically for health reasons. The chronically under- and unemployed – whose ranks currently equal 20% of the

potential workforce – remain the hotspot of the lingering obesity epidemic.

Growth in the knowledge economy has shifted the focus firmly in the direction of health. Stress and musculoskeletal problems are the main focus. But employers use preventative measures (including new technology) in conjunction with genetic profiling, so only those indicating inherent longevity and good health benefit. Other employees suffering from these problems will join the ever-increasing ranks of the ‘have-nots’ as employers do not see investment in prevention as worthwhile.

## References and Resources:

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

- ESRC Society Today, “Changing Our Behaviour, Not the Climate” available at: [http://www.esrc.ac.uk/ESRCInfoCentre/about/CI/CP/Our\\_Society\\_Today/Spotlights\\_2006/change1.aspx?ComponentId=15778&SourcePageId=15797](http://www.esrc.ac.uk/ESRCInfoCentre/about/CI/CP/Our_Society_Today/Spotlights_2006/change1.aspx?ComponentId=15778&SourcePageId=15797) (accessed 15 September 2006).
- Institute of the Future Map of the Decade (2003, 2004, 2005), available at:
  - 2003 -- [http://www.iftf.org/docs/SR-797\\_Map\\_of\\_decade.pdf](http://www.iftf.org/docs/SR-797_Map_of_decade.pdf) (accessed 15 September 2006).
  - 2004 -- [http://www.iftf.org/docs/SR-844\\_2004\\_Map\\_of\\_the\\_Decade.pdf](http://www.iftf.org/docs/SR-844_2004_Map_of_the_Decade.pdf) (accessed 15 September 2006).
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- Taking Stock, “Futures Scenarios” available at: <http://www.takingstock.org/Futures.asp> (accessed 15 September 2006).

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## Winners and Losers

In the competitive, privatised landscape of 2017, skilled workers and female workers have an advantage. Likewise, physical disability is overlooked in the balance with education, expertise, and essential good health, so it is a win for the differently abled. Healthcare professionals also win, as their salaries increase, although competition for work is stiffer – but so it is for everyone.

Guaranteeing consistent productivity is key. Thus long-term ill health – physical or mental – is a significant disadvantage in the employment market.

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

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<sup>i</sup> This organisational scheme is adapted from Global Foresight Associates’ “EthnoFutures Scanning Framework,” devised by Michelle Bowman and Kaipō Lum. Michelle Bowman and Wendy Schultz, “Best Practices in Environmental Scanning: The World Beyond Steep,” presentation at the World Future Society, Chicago, 30 July 2005.

<sup>ii</sup> With acknowledgements to the writer and director of the movie “Gattaca,” who coined this term.

<sup>iii</sup> Fitzgerald, Ronan, “Follow you, follow me,” *The Guardian*, Thursday, 14 September 2006.

<sup>iv</sup> Muir, Kate, “The first human credit cards,” *The Times*, 3 September 2006.

<sup>v</sup> See Freeman, Hadley, “Nothing in your size? Stores seek to measure up,” *The Guardian*, Saturday, 9 September 2006.

<sup>vi</sup> Chris Oakley’s 2004 short film, “The Catalogue,” presents a visual scenario of a database of customer information including previous purchases, physical and health characteristics, and financial information.