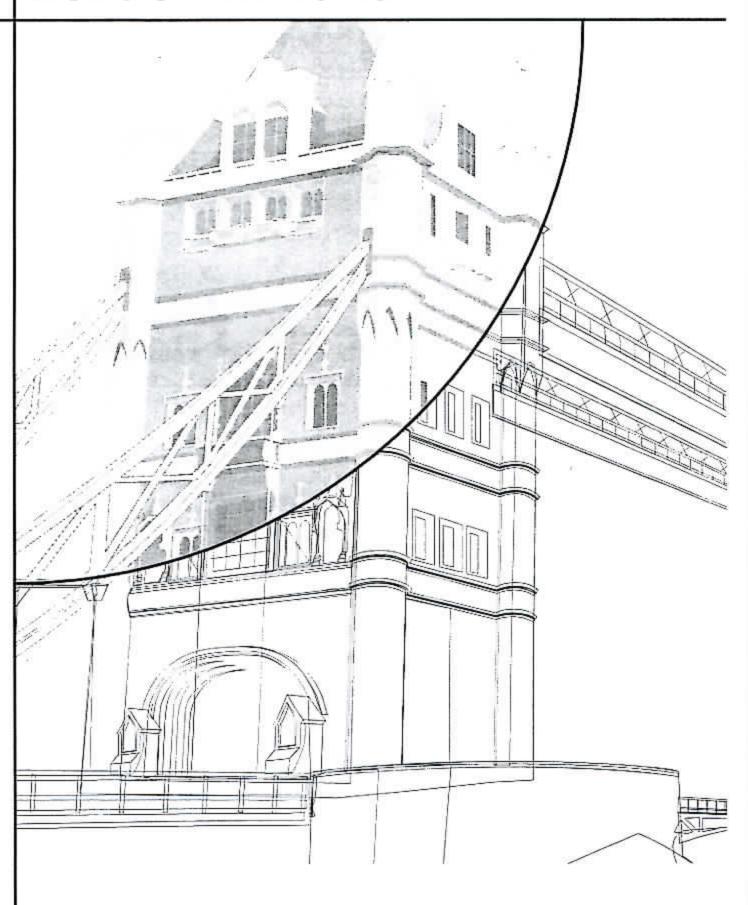
# London in 2020



A view of the forces shaping the future of London, and a vision of what we would like it to be...

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## FOREWORD

The theme of this volume is "London in 2020 - A view of the forces shaping the future of London, and a vision of what we would like it to be"

The volume centres round a set of "Mondays at One" lectures at Gresham College, and an associated set of workshops. The lectures looked at the forces shaping the future of London, and the Vision is based on the work of a group of people in their early years of work in London. It is these young people who will be making the difference to London by 2020 and it is for that reason that they were asked the questions "what is your vision of London in 2020?" and "what would make it successful in your eyes?"

The London in 2020 group come from a variety of organisations - comprising government, industry and commerce - and are considered to be the senior managers of the future. The participants were sponsored by their organisations but took part as individuals, under Chatham House rules. The sponsors are listed below – we thank each of them for their support. As well as the Vision, we include comment from other groups of approximately the same age as the London in 2020 group. Their comments set out areas of agreement, disagreement and where topics important to the groups have been left out. Common to all the groups is an emphasis in social inclusion, on London as a world class city, and on the importance of the media and entertainment industries, based on the use of English. We also include commentary from two futurists, and a salutary paper by one of the London in 2020 group on the lessons from forecasts made 100 years ago.

The text of each of the five Gresham Lectures is reproduced in full, with accompanying slides where the authors felt this helped the theme.

The workshops and the Lectures were organised by the Worshipful Company of Information Technologists with Gresham College. This project forms part of the WCIT's work in helping the City to appreciate the changes which London will face as a result of the increasing role of technology and, in particular, the effect of accessible information and communication in our lives. Both the Vision and the Lectures assume that technology will continue to revolutionise Financial Services, but one surprising aspect of the Vision is that it hardly mentions technology at all. The group all grew up in the 80's and 90's and have been aware of and familiar with information technology all their lives. Essentially, they assume that it is there and its use will increase. – that it will be there to meet the demands of society.

The reason for publishing this volume is to encourage debate, either through the electronic medium or by other means, so that the City of London can continue to thrive as one of the handful of "world cities". All of the participants will be happy to talk or correspond on the Vision. - names, and e-mail addresses are listed below. The text of the Vision, comments and Lectures is also mounted on www.fastfuture.com, which has a discussion area – please also use this to comment, agree or disagree – it is only by creating a common vision that we can make it happen!



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## **FORECASTS, VISIONS AND SCENARIOS:**

Gill Ringland - ICL and Worshipful Company of Information Technologists

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### Introduction

The London in 2020 project is about creating a Vision of London in 2020. This contribution distinguishes forecasts, scenarios, and visions to make sure we have a common set of terms, and to provide a framework for the discussion and debate that we hope to provoke.

## Forecasts

Many people find forecasts of the future unconvincing – and Martin Edwards' paper on what we can learn from forecasts made, by HG Wells in the late 1890's, about our world today shows how forecasts mostly extrapolate current trends.

Similarly, the Japanese have been carrying out foresight exercises since the 60's. A review after 25 years suggested that the accuracy of forecasts made by their working group on a particular topic was less if the participants were all experts in the topic than if they included experts in neighbouring field. So for instance a group of biologists, chemists, physicists and economists fared better than a group of all chemists in forecasting trends in chemistry.

Reinforcing this point, Figure 1, "Computing in 2000?", shows the results of a group of Information Scientists forecasting, in 1980, the shape of a "Consumerscle", that could be in every home by the end of the century. The physical representation is clearly wrong – advances in semiconductors mean that large power cables are not needed today. And no home would want to take in a device that looks like an aircraft control console. But the functionality is very close to that of a PC today – which is indeed in nearly half of US homes.

Forecasts are trying to arrive at a position or answer, e.g. "50% of the population in France will be retired by 2020". What the futurists often do not adequately separate out are the domains in which it is quite likely - barring catastrophes - that forecasts will be "good", and those where they turn out to be very off beam.

Technology forecasting seems to be more successful than in many other domains. The one exception is the overwhelming under-forecasting of the pace of the semiconductor revolution and its effect on price, performance and penetration of

programmable technology. Here the effect of technology evolution has been to create massive dislocation of industry and commerce in away, which is probably still being under-estimated. So Figure 2 emphasizes that in forecasting the future, by searching for a single point forecast, the very wide range of possible timings of events is thrown away, as is the potential range of values of the trends, depending on factors outside the view of the forecaster.

Work by the Chatham House Forum has suggested that forecasts made in the past lew decades suffered from four systematic sources of error, relating to the individual, the role of government, technology, and progress.

## The Individual is unboxed

The first is that planners' assumptions about the behaviour of people, which may have been accurate in previous decades, are certainly not right in the current world. The basic framework of a hierarchy of needs, starting with meeting our basic needs for lood, clothing and shelter, and moving on to needs for self expression and self actualization, should warn us that people widen the range of choices which they make once lood and shelter needs are met. And since today most people are not prompted by memories of hunger or cold, people's behaviour becomes increasingly difficult to lorecast. The common reason for failure of a number of forecasts, particularly the technology driven ones, was that people were more sensible and capable of adapting than the forecasters or planners expected.

This can cause paradigm shifts and shocks to occur overnight – not just the change of correct attitude for the wearing of baseball caps, but in very major ways such as the fall of the Berlin Wall.

#### Government cannot do it

The second is the major political and military paradigm shift, caused by the comparative retreat of governments. Many Western governments are trying to withdraw from the approach they took in the post war period. Partly it is because the ability to control their environment decreases, as finance moves around the globe more easily, large movements of guest workers and immigrants continue, and technology makes the international transfer of ideas faster and more copious. At the same time, the public's demand for Government services constantly increases, not diminishes. While privatization satisfies some expectations by replacing the government in supplying services, demographic and employment pressures reduce governments' ability to fulfil its post-war role.

In the bi-polar world of the Cold War the effort by the United States to stay ahead in technology meant that Government development funding was large and assured. This resulted in a stream of spin-offs for civilian and commercial exploitation. Now that the Soviet threat has disappeared, funds for research and development have been reduced. The main drivers for technological change must now come from private enterprise. Will the sources and types of technological advancement therefore be harder to forecast?

The effect of this paradigm shift is very deep-seated - many forecasts make assumptions that the role of the government will be significant.

## Technology will be used if it is useful

The third source of common error is in timescales of adoption of technological innovation. Often, the nature of a development is forecast correctly, but the timing is over-optimistic. A good idea attracts enthusiasts who assume that consumers will be equally keen. Forecasting the timing of crucial developments requires an understanding of the other components that are needed to form a total system.

For example, computer hardware needed a popular standard operating system before mass PC use could take off. An important lesson is that a forecast, which does not materialize in the expected timescale, might not be wrong in its essentials, only in its timescale, so it should not be discarded too quickly. The other components may come from totally different fields – as in the case of the microwave oven discussed earlier.

The question we kept asking ourselves was – who would want one of these and what would they use it for? It provides a useful counterpoint at a time of hype.

## **Progress**

A fourth paradigm shift is a change in public attitudes. For centuries up to the turn of this century, Western intellectual thought embraced the idea of continual progress towards greater scientific certainty and a more perfect state of being. Ultimately, everything would be explained, and all problems would have solutions. The experience of the 20th century has disillusioned many, and preoccupations with worries about issues such as pollution, the nuclear threat, and ethnic conflict have challenged our assumptions about the nature of progress. Now, we do not think that things will necessarily get better. We think we might do well if we can merely sustain things. This loss of optimism is more marked, perhaps, in Europe than in the United States.

#### Trends

In the London in 2020 project, we are making a number of assumptions about the background trends behind any view of the future. These can be summarised as:

- Pervasive availability of information: access to this turned out to be one of the critical elements of our vision.
- New communities: acceptance of diversity within London's many communities was another important strand.
- New ways of doing business, which lay behind many of our discussions on work and transport patterns.
- New methods of entertainment, which similarly affected our vision of a London with effective communities, transport and electronic communication.

#### Scenarios

Scenarios are a different approach to the future, as contrasted in Figure 3. They were originally used in the 1950's, and the name derives from the Hollywood term for a film script or storyline.

When I was gathering data for the book, "Scenario Planning - Managing for the Future" the Conference Board Europe polled their members on their use of scenarios. The members cover many of the large European companies and European headquarters of American companies. Most people responded that they were using scenarios in Michael Porter's sense; "an internally consistent view of what the future might be", "not a forecast but one possible future outcome". They used scenarios to create possible futures to provide wind tunnels to test their companies' strategies against. And many scenarios were framed in the context of a key question "what problem are we trying to solve?" which provides focus.

Some scenarios are very long term - for instance in the oil business it takes years to plan and build refineries, even longer to open up new oil fields. Other organisations

look to a shorter timescale - though its usual to go beyond the current planning horizon, e.g. 10 years if the planning horizon is 5 years.

#### Vision

The London in 2020 project has developed a vision: we asked the question – what do we want London to be like in 2020?

Our vision made some assumptions - for instance those above, and also

- Liberalisation of trade between countries and more privatisation of state industries outside the UK
- Globalisation technology underpins the ability to work, play, trade at a distance and across country boundaries.
- Continuing technology innovation was assumed by the entire group to the extent that technology was assumed to be in place by 2020 to support any aspect of the vision.
- English would continue to be a significant advantage to London, as the second language of choice of a large proportion of the world's population.
- The role of national governments in determining the shape of London in 2020 would be less than that of regional and global forces.

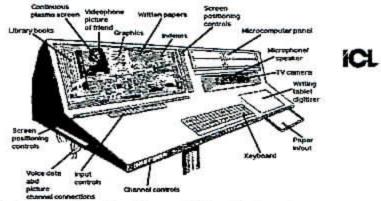
Our vision was developed by identifying the several headings needed to describe a future—he family and community, the environment and transport, leisure and work, shopping and lifelong learning. For each heading we described how we would like it to feel, and also what it could be if things went wrong. The positive views then formed our vision.

This means that we have not done a number of things we could have done e.g.

- Envisaging a future of decay for London
- Asking how our vision could be achieved, for instance what sort of events would cause the sort of London we envisioned.
- Create a plan of how to achieve London in 2020.

The purpose of our London in 2020 Vision is to provide a catalyst for discussion and debate.

Figure 1: Computing in 2000?



The "consumerate", on information conside that could be in use in the home by the end of the century

Source: Institute for Scientific Information, 1980

Makerygand Busines Sharoov

Figure 2: Forecasting the future

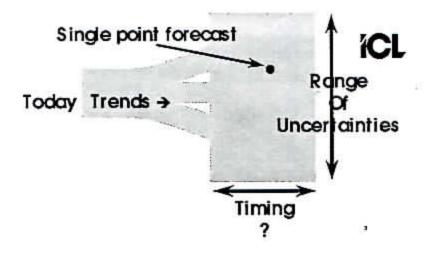
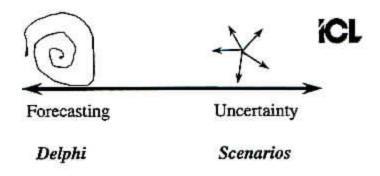


Figure 3: Forecasting and Scenarios



## **LONDON IN 2020 - VISION**

# London in 2020 - a vision of what we would like it to be.

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The common element from all of these contributions is that they originate from a generation that have grown up with information technology, and in a social system which no longer reflects the privations of war and post-war in Europe.

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## **LONDON IN 2020 - VISION**

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## Summary

This is a vision of London in 2020. It is written as if the group that created it are living in London in 2020. It is a synopsis of what the group sees as a desirable environment. It is a vision, not a plan.

Our vision of London in 2020 is that London is now one of the top three cities in the world. It has strongly differentiated itself with a leading brand in the global arena and become a thriving, 24 hour city where coople aspire to live, work and play. It is a fun, dynamic, creative and innovative place to be, while its integrated infrastructure serves as a solid base for excellence in information exchange, entertainment, shopping and education.

London's thriving, information-rich multi-cultural community makes it attractive to people from around the world. Symbolised by its colourful mayor and dynamic logo, London is also seen as one of the world's 'hub' cities. Its values are those of the global village, with Londoners defined as those who are part of the London community and identify with its brand values.

While London continues to be a leader in financial services, defined in a broad, global sense, the vision looks beyond this specific expertise and is built on more universal strengths.

For example, London's integrated physical and electronic network has created a strong sense of inclusiveness: the group emphasised that the vision is one where no one is excluded by a lack of access. At the same time London is a group of diverse communities, each built upon shared culture, interests and locations, whether physically or virtually. More decisions are made on a community basis, while the values and priorities of Londoners include respect for individuals irrespective of race, creed, colour and gender. This is indeed one of the city's great strengths: that difference and diversity are understood and enjoyed. The government, however, works to co-ordinate this fragmented society efficiently, to prevent conflict or duplication and where integration is critical, such as in transport.

Gridlock and pollution are now distant memories since improved transport, including new methods of travel, and flexible working patterns, have made London more easily navigable. This has given individuals far more choice about where, when and how to work and play. In addition, there is a considerable increase in home-based entertainment, education, shopping and commerce over a range of existing and new delivery channels.

Londoners travel into central London increasingly for entertainment and leisure. The city is a centre of creativity in all sorts of ways, and characterised by its knowledge industries, enhanced by the fact that English has become so prevalent in both business and entertainment. It offers rich sources of flexible education so that individuals are able to tailor their education according to their needs throughout their life times. The creative industries are flourishing, while London is sought after as the venue for major global sporting events.

London is undergoing a renaissance. It has successfully managed to overcome the constraints of its Victorian infrastructure by continuously exploiting new ideas and systems and its expertise is internationally acknowledged. It has helped inspire regeneration in other cities both in the UK and around the world. One of the key components in this revival has been its intelligent exploitation of formerly disused land and buildings to create growth which is environmentally sustainable in the long term.

Technology is pervasive but not invasive: it is everywhere, but is largely transparent to the user. In 2020 we assume that where there is a need technology is sufficiently advanced to fulfil it: technology is a key enabler, not as an end in itself. It is there to meet the demands of society: the recognition that 'technologies' are used and adapted in different ways by different people is a vital part of this vision.

London in 2020 is thus a vibrant, diverse, colourful and durable place, a sustainable, global city built around networked communities with all the social, economic and environmental benefits of traditional villages but without the constraints of travel, parochialism and a lack of choice. London in 2020 is the world's first choice as a place to live.

#### Financial Services

London is a world centre of Financial Services – focusing on the creation of new products and their packaging, and the management of corporate funds. But the number of people employed in London on processing has dropped substantially due to globalisation. To keep competitive against other cities with the advantage of English – such as New York and Los Angeles - London has started to actively benchmark its attractiveness to entrepreneurs.

## The Family And Community In London 2020

London's dynamic balance of diversity and integration is reflected in the way that family and community inter-mesh in 2020.

Twenty years ago, the then government worked hard to promote the idea of the family in the traditional sense. Now there is widespread recognition that the idea of family has to be far more flexible, encompassing not just the nuclear family, but extended families(which are not necessarily related) and single parents-no longer criticised as they once were.

Both women and men are being offered real choice. Crèches are now the norm in the workplace, paternity leave is provided and encouraged. The rise of teleworking makes it easier to work from home. Local communities also offer both support and

encouragement through networks individuals can tap into, as well as creating physical centres for teleworking, which appeals to those who lack the existing infrastructure at home. This centres, which are backed by the private sector, are also used for educational and training courses during the evening.

This also reinforces a sense of community. This growth in community is in line with the rise of more local say in decision-making. Even in what were considered disenfranchised areas, local people have real political force and power. In fact, London boroughs increasingly have their own sense of place and identity, with local newsletters, local shops, local arts and culture. There has also been a rise in local exchange trading schemes.

These have been facilitated by electronic links, with local Internet access provided in a number of public places and where people vote digitally and pursue life long learning. Even though small is seen as beautiful, technology means that the idea of 'family and community' can extend globally. Communities can be built around any number of different interests, from football to more academic pursuits, and cut across class, gender and ethnic origins.

### Leisure and Work In London 2020

Peoples' lifestyles can be seen in terms of domains. Most aspects of life can be categorised as belonging predominantly to one of four domains: work, domestic, mobile or public. However, a blurring of the boundaries between the areas in peoples' lives is becoming increasingly evident. For many people, the boundaries between work and leisure (usually domestic domain), in terms of location of work, 'working hours' and socialising with colleagues, are so fluid that they are no longer definable. It is also possible to work or socialise with full effectiveness whilst mobile, due to improved communication technologies. This convergence is happening in all areas of life.

The boundaries between work and leisure have blurred as people look for a more balanced approach to life. This has been helped by the rise in more flexible working patterns, and by the fact that London's inhabitants have more time to spend on themselves, particularly those who have opted for early retirement. Leisure itself is far more inclusive: leisure facilities are more flexible, so people are able to choose what they want to do day or night. While there is 24-hour shopping, Sunday has once again become a day of leisure. Chores now take far less time than they used to.

There are more pedestrianised areas, city gardens, and access to the countryside is easier. London boasts a cafe culture, and is also seen as a safe place to be. It is a highly cultured city and, because all cultural activities either very cheap or free, no one is excluded. This inclusivity has been boosted by the use of the Internet for cultural events. There has been a significant growth in the film industry, with London known for its creativity and is a centre for education and learning.

The media, in fact, plays a central role in London's positioning. The quality of television has increased dramatically, although the line has blurred between different media vehicles, producer-led programming and consumer-driven interactivity. Sport is also a key part of leisure. There are far more facilities for all ages, with ease of access by transport such as buses, and cycle lanes to promote cycle use, especially in the pedestrianised areas.

Because so many older people have far more leisure time, they are increasingly offering their time and skills to help others.

## Lifelong Learning In London 2020

London in 2020 has become a centre for knowledge and individual life long learning. On the supply side, accessibility to the best teachers has been made easier, either physically or electronically. More communities have taken the initiative to create electronic networks to encourage wider use.

The demand for lifelong learning has been given a boost by the development of new measures of personal development so that individuals can see the benefits from both formal and informal learning experiences. Learning is now perceived as socially acceptable, not a period of 'penance' that has to be undergone.

Previously formal educational structures have been turned upside down in terms of learning styles, teaching styles, and points of entry and exit to encourage more access and create more diversity in the delivery of learning.

In higher education, while universities still act as the repositories of knowledge, the way they operate has now been turned upside down. Learning modules have been developed to boost flexibility, while the money flows from the 'customer' to the institution, which enables more self-direction. Debate and participation by students of all ages characterise the learning process. Virtual universities are becoming more prevalent.

#### The Environment In London 2020

London 2020 is environmentally a pleasant place to five and work. The number of parks/green spaces has increased, and there is a growing re-use of the relatively large amount of 'brown' land that has lain unexploited for too long. Noise pollution has been tackled by using lightweight, noise-absorbing materials.

The emphasis has shifted to building communities rather than creating high rise 'ghettos'. A major programme of tree planting along roads in all parts of London has created green lanes that give the city an attractive, leafy image and noticeably enhanced the atmosphere. The Fleet River has been uncovered, so that London has now acquired a Venice-like feel, which, ironically, was Christopher Wren's original vision.

There are few factories, since London now has very little manufacturing, while the problem of pollution has been dealt with by a variety of measures, including cleaner vehicles and much improved public transport.

The museums, galleries and libraries are free, while London also sports a rich mix of architectural styles, from neo-classical to Le Corbusier-type, modern designs. There is an increase in religious temples to reflect the diversity of faiths. One constraint has been that many of the buildings were designed 30 years ago, when developers were commissioning large, open plan office space that could deal with the increasing amount of information technology. However, as well as whole companies inhabiting buildings, desk space is rented out to individuals who need a central London address.

## Transport In London 2020

London began to address the thomy issue of public transport at the turn of the century. Radical decisions were taken to improve the ability of Londoners to move around the city, whether for work or social reasons, thus heightening London's competitive position. For example, there is now 24-hour complete coverage by London Transport, with free passes for London taxpayers. An increase in multi-purpose vehicle systems to bring people to schools, shops, companies - and making them part of the integrated transport system - has drastically cut down on the amount of cars. Transport has been enhanced by making journeys both more productive and more 'experiential'.

Companies have been encouraged to "re-engineer" themselves to develop more suburban-centred working, including teleworking, while company vehicles have been discouraged through 'smart' taxes. A high-tech light rail network has cut down the number of buses on the roads, while public vehicles are more safe and more secure, as well as being far more comfortable for the elderly and disabled.

The spread of light railways has helped connect the suburbs to each other, so people no longer have to travel to the centre to get to another outlying area. There is a much better use of the extensive canal system in London.

All these measures have helped London profit by increasing the number of people who now come into the centre by choice, for social reasons. While more flexible working patterns have lowered the numbers who need to travel in for their jobs, people still meet face-to-face so ease of travel is still critical for work. However, the growth of electronic commerce has meant a decrease in the need for couriers and document deliveries - although pizza and other fast-food deliveries flourish.

'Smart' taxes have helped discourage the use of private vehicles, although people still like to drive their own cars. However, emergency services and delivery vehicles are given the highest priority. Congestion has also been lowered through the development of 'smarter' delivery systems. The popularity of home shopping has meant fewer shopping trips for the basics, while the outsourcing of deliveries has cut down on duplication. Taxes on driving have also raised finance for both public transport and road improvement.

Overall, transport has become much cleaner, while satellite technology has improved mobility – the ability of individuals to work, shop, communicate, bank or learn wherever they are.

## Shopping In London 2020

Electronic shopping has become increasingly popular, with deliveries both faster and more flexible. Some of the big food retailers have moved from being food supermarkets to 'one-stop' shops, offering a wide range of services such as health centres and eating places. Retailers are also offering a far wider range of formats and sites depending on demand.

In central London, those shops that are successful have transformed themselves into specialist centres of "experiences", both social and cultural, and are no longer just sellers of goods and services. Department stores have disappeared: now there are clusters of specialists, craft shops/boutiques. What distinguishes those stores and makes them attractive to both Londoners and visitors from around the world is their "quirkiness".

Technology means that people can now buy products customised just for them, whether physically or electronically. Those West End tailors who moved with the times have seen their fortunes revived.

Although this is very much of a cashless shopping society, street markets such as Brick Lane still thrive, attracting shoppers because of the interactive market experience of getting a bargain,

London has become part of the global shopping village, with Londoners thinking nothing of popping over the New York for Christmas shopping, and New Yorkers visiting London.

## Conclusion

This vision purposefully emphasises the positive aspects of London in 2020. The group did not set out to define a Utopian future, but felt strongly that having a vision of the destination is the lirst step in figuring out what routes to take to achieve it. After all, a road map without a destination leads nowhere.

## **COMMENTS FROM TRAFALGAR SQUARE 2000**

Trafalgar Square 2000 (TS2K) is "The Young People's Millennium Project". It is a gateway to Media and Creative Arts opportunities at foundation level, and is located in the centre of Brixton.

## The Vision needs more on -

"Road planning must be tackled to allow the lifestyles in the Vision"

"Safety of public transport needs to be improved to achieve the Vision, the report could have considered the use of IT to do this"

"How to pay for the services envisioned – for instance will buses become a luxury? and how will lifelong learning become a reality?"

"Developing the talent of Londoners"

"How to make a multi-cultural London work"

#### Our Vision for TS2K

"To be the best College of its kind, developing talent in its multi-cultural community, and creating distinctive contributions to the world via new and improved technology"

## COMMENTS FROM A FOCUS GROUP

This group consisted of people from the media, architectural, restaurants and advertising – mostly small companies.

#### **Heated agreement**

"London will favour the entrepreneurs"

"Aesthetics, culture and the arts will be very important – cities will compete via the arts – films, buildings, and so on – to create their own brand"

"Leisure will be the most important element in our lives"

"Workers will be European rather than just nationals and will be very fixible – barriers between countries are reducing"

"Everyone will have the same respect in the community"

## What the Vision left out - Personal challenges in the new world

"We are going to have to develop personal resources to cope with our longer lives until we reach our 90's"

"If Paris had hosted this discussion, disaster scenarios would have been on the agenda"

"New drugs are being developed which will be mood enhancing and mood changing, the vision needs to consider how we are going to control what we do"

## - Social exclusion

"The vision does not consider gender, the gap between the have's and have not's, or the equality of its citizens"

"We must make things bearable for the people who have little or nothing"

"There will be plenty of labour vying for the low wages which will be on offer"

## Heated disagreement

"The Vision needs to consider the negatives"

"London will not be a good place to build a home and raise a family"

"The Vision is not at all wild, it is really about today's situation extrapolated to 2020"

## THOUGHTS ON LONDON IN 2020:

Robit Talwar, Fastfuture

## I was interested by

The assumptions of the group: these seemed to me to include some which are different from previous generations, such as the global nature of their ambition and expectations, and the effect of that for London. Very few people believe in the end of the nation state — can the vision co-exist with this world? What is the relation between London and England, the UK, Europe? What is going to change things in the next twenty years more than the last 20?

The group assumed access to information and the delivery of the promise of technology to improve life. In fact, the vision was that nobody felt excluded or disenfranchised. But there are signs that work will get worse – faster and more demanding. The world of the 24-hour per day use of the laptop, of unclear and unlimited responsibilities – the vision assumes that we have found a way of balancing work and non-work.

I liked the joined up thinking about lifestyle, travel and telecoms. But I was interested that the group had not included the effect of the health problems of London, especially the problems of ageing, of homelessness, of stress. I can foresee that Sainsbury's may run health centres by 2020.

I liked the idea of using the Fleet River and canals as part of the regeneration of London, and thought the thinking on community was laudable. However some hard questions need to be asked.

## I disagree completely

Though I agree with much of the vision on transport, I think it is not radical enough. If we think about the people who will live in London in 2020, which of their journeys will be long or short, for work or leisure? Will we see the pedestrianisation of the centre of London? What technologies move into adoption within 20years? Can we foresee the use of helishuttles to make use of the vertical dimension?

If we ask the question- will London have a centre or be a set of multiple villages like Los Angeles – we can see signs already that people are spending an increasing part of their discretionary income in their "home" community.

The vision suggests that "malls" will replace department stores — I disagree and believe that one of the remaining roles for the retailer is as guarantor — of consistency of service or delivery. This can be done by a department store, not by a mall.

## Hard questions are

What mechanisms can we use to fund free museums and libraries – would local sales taxes do it?

How can a dynamic mix of local say through participative government, the needs of integration and a mixed economy establish a mandate?

The vision assumes that we have created a world with a balance between work and non-work, in the context of taking responsibility for ones own life ambitions and satisfactions. As the traditional role of institutions in providing a framework of rules and sense of context reduces, people look for other ways of making a difference. At the same time it is clear that first line employees need to understand the ethics of the organisation in order to deal with complexity – how can people learn how to learn in order to do this? This is in some sense the big question for Europe, not just London – what is happening now to make education for the 18-year-olds of 2020 suitable for life as it may be. And how can people find the time to work, participate and enjoy relationships?

If as seems quite likely London will not be a major site for employment in the Financial Services industry – though it will continue to be a hot-bed of ideas and inventiveness on Financial products – what is London's big new industry? Will there be one? Or will knowledge workers in many industries chose London as a place to live because of the ambience?

It is really hard to get a vision of London in 2020 — which cities will be the European big 3, what will their cultures be? What will life be like for the rich, the poor, the students, and the old people? And while the world is unlikely to be any more logical or homogeneous than it is now, can we work out what the citizens of 2020 will be worrying about?

## A PERSONAL VIEW:

Keith Bellamy

Standing on Norman Foster's St Paul's Bridge looking down the River Thames towards Westminster, the signs of the transformation that has been taking place since the dawn of the 21<sup>st</sup> Century are clear for all who know where to look. The most obvious sign being the still futuristic looking home of the Greater London Authority, and the slogan emblazoned over its entrance "London, more than a place, more an emotion."

Over the past twenty years or so, London has been doing what it is best at, reinventing itself for the future whilst keeping a healthy respect for its past. The most
obvious change on the landscape is in the Square Mile where many of the functional
buildings designed to service the Financial Services Industry in the wake of Big Bang
are being slowly removed. The Thames is starting to be treated with respect and the
boulevards on both the North and South Banks are starting to be populated with a
wide range of hostelries serving the burgeoning demand for "street life." A second
glance at the extensive choice open to the public provides the key to one of the driving
forces behind London's reincarnation — Multiculturalism.

When the new Mayor finally came into office, London was probably at one of the lowest points in its history. The Financial Services Industry, for so long the mainstay of London's economic wellbeing, had virtually collapsed. No single cause could be attributed to the rapid decline experienced. In part, it was driven by the larger than anticipated casualties of the millennium bug. The consequences of not being part of "Euroland" acted to marginalise the influence of the long established institutions leaving them as secondary or even tertiary players in the re-capitalising of Europe. Another potential cause of the fall was the rapidly deteriorating environmental conditions in the centre of London. Air quality registered as seriously unhealthy more often than not, and the fact that London was "grid-locked" was the rule rather than the exception.

Whilst the challenges presented to the New London Authority were unprecedented, they also acted as a blessing in disguise. The new Mayor was elected with a mandate to fix the problems that Westminster had failed so dismally to tackle. Any hint of interference from central government was met with a threat of invoking a constitutional crisis. The GLA set about its task with gusto and verve. Its strategy had two major thrusts, draconian focus and partnership. Whilst the plan to tackle the environment, particularly the traffic systems, its choice of prime partner, Walt Disney, was as inspired as it was surprising.

The early introduction of road charging, whilst leading to squeals of attempting to suppress individual freedom, had a very quick double benefit of reducing traffic whilst raising funds to completely renovate the public transport infrastructure. Looking back from our vantage point here in 2020, it is easy to see that the current fully integrated transport system which is the envy of all the other major conurbations in the world, came from the early adoption by the Authorities of constantly variable pricing technology. This transformation from Industrial age to information age accounting practices made it possible to price, individually, each and every journey taken by Londoners providing a wide range of choice and price options.

At the core of the system lies the London Passport held by both physical and virtual residents of the city. On embarking on a journey, the holder connects to London Travel, the centralised traffic management system that has now been a mainstay of London life for over a decade. The would be traveller then enters details of the journey they wish to make, Hampstead Heath to Piccadilly Circus say, and either the time of departure or desired time of arrival. Each individual passport contains details

of the means of transport available to the traveller. She is then presented with a number of choices, to drive and park in St Martins Lane £85; or maybe bus from the old Bull & Bush to Eros £2.70. Having made her choice, the means of transport is reserved and the charging mechanism updated to reflect the demand on the system.

What Londoners appreciate is having the choice of options and the knowledge that they will arrive at their destination when they expect to. Of course there are still exists a major gap between the "haves" and the "have nots." However, the social friction that this would have caused at the end of the 20th Century as been dissipated through the knowledge that those paying the high costs are funding the reestablishment of "Green London. This, again, was another major plank in the GLA's strategy to tackle the environmental crisis. Against all expectations, many brown-field sites expected to be re-zoned to meet the projected housing shortfall of the city were redefined as City Nature Zones, where any physical building as embargoed for the next century. The approach adopted by the Authority to the housing crisis was to see the shortfall as an opportunity and not a threat to the future prosperity of Greater London. On the one hand, the growing trend from individual dwelling locations to communal, non-biological family homes housing on average 10 persons, was recognised and encouraged with financial incentives. This created the trend of re-converting Victorian and Edwardian properties back to their former splendour. A trend that is as active today as it was in 2005.

The GLA recognised, early on, that they faced a major paradox. If their vision for 2020 were to be achieved, the demand for high quality, environmentally friendly housing would soar. If they were to accede to this demand then the vision would be compromised. On the other hand, if they failed to do anything then the asset price inflation that would result would have made Nigel Lawson's boom in the 1980s seem insignificant.

The solution came from re-visiting the post war strategies of Garden Cities. In this case, satellite cities were adopted as remote London. Served by a high speed Rail Services, cities such as Reading to the West; Hertford to the North; Chelmsford to the East; Maidstone to the Scutheast; and Guildford to the Southwest became part of Greater London. With journey times from City Centre to each outpost of less than 20 minutes, there were no barriers to participating in the life of what was becoming the "hottest" city in the world.

The fact that London became the City to be associated with was all down to the agenda established by the GLA's major partner in the London Renaissance programme, Disney Corporation. Despite all the hyperbole and spin generated by the government at the time, the Millennium Dome was perceived by the populace in 2000 to have been an unmitigated disaster. One of the New Mayor's prime tasks was to find a partner to take this white elephant off of its hands. He picked up on the negotiations that were being undertaken at the time for Disney Corporation to buy the dome for a "song" and establish EPCOT II on the banks of the Thames. Rumour has it that it was a throwaway comment by a junior civil servant when discussing the theme of multiculturalism that it made no sense to build a new theme park when the whole City is already one.

With the efficiency that comes from having run theme parks across the globe, executives from Disney set about making this comment the truth for London. Different areas of the City were encouraged to reflect their cultural diversity as strength for London rather than a weakness. Events are co-ordinated across all of the regions, leading to a City where every week is carnival week and every night is party night. More importantly, you don't even have to be there to participate. As part of the programme to tie the adopted outposts into the City centre, large Virtual Reality centres were constructed that allowed the London Citizens of Maidstone to experience either a street party in Notting Hill, or a concert at the Albert Hall. As the cost of telecommunications virtually disappeared in 2013, these centres were extended

across the globe. There are now parts of Beijing, Sydney, Dallas and many other major cities that are forever London.

The creation of this multicultural environment has not been without its own problems. London is the undisputed world capital for designer drugs used by revellers at every opportunity. Whilst there is a more tolerant attitude to some of the softer drugs used at the turn of the century, the GLA has adopted a strictly prohibitive stance to these new molecules. This has lead to a thriving underworld, which occasionally rears its head and threatens to spoil the party.

Occasionally, the exuberance of one region might spill into its neighbour's leading to friction. However, the mediators from Disney tend in the main to be on top of any issue that threatens to rock the boat. One of the major benefits that seem to have emerged from the multicultural harmony is an increase in the spiritual nature of the City. Temples, mosques, synagogues and even churches are enjoying congregations that ministers only used to dream of 20 years ago. There seems to be a causal link between this rise in spiritual awareness with the forging of western and complimentary medicine practice. Today, London is recognised as the holistic health care centre of the globe.

As I look at sun setting over Waterfoo Bridge, and recollect all the changes that have befallen this fair City in such a short period of time, I find it amusing to see what appears to be happening in Threadneedle Street. A number of niche City Revivalists are starting to establish their businesses. Wearing pinstriped suites, which went out of fashion some ten years ago, and garish braces, they are attempting to reintroduce many of the long forgotten rituals of the old Square Mile. They claim it reflects the coming of age of quantum computers and how the distance from the source of information (in their case the old London Stock Exchange) creates a competitive disadvantage.

Personally, I am not bothered whether it is true or they are just playing out one of the magical charades that combine to make London Town the place that I can take pride in extolling to the rest of the world as my home town. Unlike certain other Cities that have to name themselves twice to get attention, one only has to mention London to see the sparkle in the eye and the evocation of the emotion that is decidedly more than just a place.

## The Last Millennium Bug: H G Wells and Forecasting the Future in the 1890's Dr Martin Edwards, ICL

During the 1890s public appetite for predictions about the future reached a new height in England. The coming new millennium brought a growing stream of publications catering to public curiosity on what the future might hold. These publications appeared as short stories and articles in the periodical press, as political treatises and as novels. Their increasing quantity as the old millennium drew to a close fed an appetite which showed no signs of diminishing, and they created wealthy authors and publishers in their wake. The concerns of these publications, and the readership they addressed, are a rich minefield for historians and for present-day predictors of the future. They open at least five questions for debate: what were the predictions of the future made 100 years ago? What was the environment in which they were made? On what basis were the predictions made and to what extent did they come true? Finally, what can the predictions of the 1890s tell us today about our own predictions of the future, and the history of the past?

Books about the future and utopias have a long pedigree in English literature and its European counterparts. A Marxist historian has written that the Island of Utopia and the Island of Britain have parallel histories which help to explain each other, the utopias of the future were the island people hoped or feared Britain might become. Some belonged to the literature of the elites, others to the ballads and oral traditions of popular culture. The only novelty in the publishing craze of the 1890s was its intensity, not the luture it addressed. Often printed key works before the nineteenth century included Sir Thomas More's Utopia (1551), Francis Bacon's New Atlantis (1627), Daniel Deloe's Adventures of Robinson Crusoe (1719), Jonathan Swift's Gulliver's Travels (1726) and William Godwin's Enquiry Concerning Political Justice (1793). These were followed in the nineteenth century by Robert Owen's The Book of the New Moral World (1836-1844) and by Lord Lytton's The Coming Race (1870). In Europe, writers about utopias or fantasies of the future included Jules Verne, who published his Voyage an centre de la terre in 1864, and Albert Robida, who published three novels about the future between 1882 and 1892 captivating the French reading public\*.

The political and intellectual climate of late nineteenth-century England was particularly ripe for a ferment of forecasting. Queen Victoria had reigned since 1837, but the country had undergone sweeping change during her long reign. England had become the industrialised centre of a world-wide Empire of commerce, but was experiencing the strains of imperialism in the Boer War. The growth of factories, the towns in which they were located and the industrial working class they created, presented unforeseen challenges of social class, order and control. The European revolutions of 1848 seemed to leave England relatively untouched, but it was in London where Marx researched and published his works, Charles Darwin had reversed the intellectual basis of Victorian culture in his Origin of Species (1859), refuting the Biblical history of evolution and concluding that Man was descended from the apes. The pace of technological innovation was on the increase: Alexander Graham Bell patented the telephone in America in 1876, while Daimler invented the internal combustion engine in Germany in 1884 and the first cinema films were shown in France in 1895. A few years later the first powered flight was made by Orville Wright in America in 1903. The authentically British inventions of the period were the factory, the Boer War concentration camp and much later television in 1926. Victorian homes,

A.L. Morton, <u>The English Utopia</u>, London: Lawrence and Wishart, 1969, p. 11. A.L. Morton was Chairman of the History Group of the Communist Party of Great Britain.

Robert Henrick, "Albert Robida's Imperfect Future", <u>History Today</u>, July 1998, pp. 27-32.

and especially those of the reading middle classes, were filling with gadgets, while factories belched smoke in the distance.

One man in particular dominated, and later claimed he had created, the public appetite in the 1890s for predictions about the future. Born in 1866 in Bromley, Kent, to a father who was a domestic gardener, shopkeeper and cricketer, and to a mother who was a maid and housekeeper, H G Wells died in London in 1946 a wealthy man and, to quote a recent biographer, "a world-renowned scholar and pundit." 3 Between 1895 and 1914 he wrote 32 books, in addition to numerous short stories and articles. Of these, 9 novels and 50 short stories were explicitly set in the future. His works about the future included The Time Machine (1895). The War of the Worlds (1898), When the Sleeper Wakes (1899), Anticipations (1901), The First Men in the Moon (1901), The Discovery of the Future (1902), A Modern Utopia (1905), The Future in America (1906) and The War in the Air (1908). Wells was not writing alone: other authors published successful, though less prominent, works predicting the future at the turn of the nineteenth century. These included the William Morris' News from Nowhere (1890), Edmund Boisgilbert (Ignatius Donnelly)'s Caesar's Column: A Study of the Twentieth Century (1890), Eugene Richter's Pictures of the Socialist Future (1893), G. K. Chesterton's The Napoleon of Notting Hill (1904) and a rash of books predicting war with Germany\*. Wells, however, was unique in the quantity of its output, the attention his works received and his longer-term impact on other predictors of the future, including Aldous Huxley's Brave New World (1932), George Orwell's Nineteen Eighty-Four (1949) and Arthur C. Clarke's Profiles of the Future (1962)5.

Wells was not slow to claim his own influence on the old and the new centuries. In his Experiment in Autobiography (1934) he claimed:

"Now Anticipations [1901] was not only a new start for me, but, it presently became clear, a new thing in general thought. It may have been a feeble and vulnerable innovation, but it was as new as new-laid egg. It was the first attempt to forecast the human future as a whole and to estimate the relative power of this and that great system of influence [...] I was carrying on the curves instead of the tangents of history. I was indicating, even if I was not to some extent providing, new data of quite primary importance for rationalized social political and economic effort. I was writing the human prospectus."

Wells' sense of grandeur at his work was shared by many contemporaries and ridiculed by a few. The socialist Beatrice Webb called his <u>Anticipations</u> (1901) the "most remarkable book of the year", but after meeting Wells a year later called the author "an interesting though somewhat unattractive personality". The American novelist Joseph Conrad in a letter of 1896 wrote to Wells of his "uncouth outburst of naive enthusiasm" at his works. George Orwell, writing in 1935, unflatteringly described the utopias of Wells as "infested by nude school-marms." But Orwell acknowledged that Wells was the defining author of his generation:

David C. Smith, H G Wells: Desperately Mortal, New Haven and London: Yale University Press, 1986, pp. 57-58.

See I. F. Clarke, Voices Prophesying War, 1763-1984, Oxford: Oxford University Press, 1966.

<sup>&</sup>lt;sup>5</sup> Rostynn D, Haynes, H, G. Wells: Discover of the Future: The Influence of Science on his Thought, London: Macmillan, 1980, pp. 4-5.

Herbert George Wells, Experiment in Autobiography: Discoveries and Conclusions of a Very Ordinary Brain (since 1865), New York: Macmillan, 1934, pp. 505-506.

Beatrice Webb, <u>Our Partnership</u>, ed. Barbara Drake and Margaret I. Cole, London: Longmans, 1948, pp. 226; 230-231.

David C. Smith ed., <u>The Correspondence of H. G. Wells</u>, London: Pickering and Chatto, 1988, 4 vols., I: 263-264.

Wells, Correspondence, IV: 326-327.

"Thinking people who were born about the beginning of this century are in some sense Wells's own creation. How much influence any mere writer has, and especially a "popular" writer whose work takes effect quickly, is questionable, but I doubt whether anyone who was writing books between 1900 and 1920, at any rate in the English language, influenced the young so much. The minds of all of us, and therefore the physical world, would be perceptibly different if Wells had never existed."

Wells's commercial acumen as an author must be stressed before looking at his predictions of the future in detail. This strongly influenced how, and more precisely what, he wrote: forecasting the future and counting royalties were two inextricablylinked activities for Wells. From an un-distinguished and un-wealthy background, Wells pursued a brief career as a teacher before studying at T.H. Huxley's Normal School of Science in 1884 and taking a Bachelor of Sciences degree at the Royal College in 1890. Wells published his first work in 1887 in the Science Schools Journal, a tale appropriately set in the twentieth century. He soon realised that there were many other aspiring writers of his age, but not his scientific background, in London, and that publishing opportunities were fiercely competitive. Bankruptcy threatened him at least once, early in 1895". Wells responded to the challenge of debt through writing with increasing astuteness, publishing 14 novels before 1900 with a predominantly scientific theme. He extended the future setting of his first story to send unsolicited stories to London's literary magazines. Wells knew the market, the editors and the middle-class readership and modelled his work accordingly. In a letter of 1898, written while he was under contract to the Strand Magazine, he complained:

"It's like talking to fools, you can't let yourself go or they won't understand. If you send them anything a bit novel they are afraid their readers won't understand. The stories they have had I consider bosh, but they liked them tremendously." 12

Given his precarious finances, Wells measured his success as an author by the income he received. In a letter of early 1895, Wells described his "gorgeous state of cockiness" at an advance secured for The Island of Dr. Moreau (1896). Fresh from the success of The Time Machine (1895), Wells wanted an advance of £100, securing eventually just £60<sup>13</sup>. By late 1896, Wells was negotiating aggressively with publishers, arguing that "I don't intend to bind myself to any publisher upon his mere promise to publish my books" 14. By 1901 was receiving advances of £400, multiplying his earning potential by nearly seven-fold over five years. Wells in addition began receiving royalties for publication in America, France, Germany, Sweden, Spain, Russia and Italy 15. The future had made him rich. What, however, did he predict to bring him such success?

Wells was one of the first writers to have received a formal scientific education. At the Normal School of Science he was heavily influenced by T. H. Huxley, a leading interpreter of Darwin. His major studies at the Royal College were biology, geology and astronomy, disciplines in the midst of a Darwinian conceptual revolution <sup>16</sup>. Wells claimed retrospectively in his <a href="Experiment in Autobiography">Experiment in Autobiography</a> (1934) that his forecasts of the future in <a href="Anticipations">Anticipations</a> (1901) were based on the principles of the science he was taught. He started from a general premise and worked forwards, a system of

<sup>10</sup> Orwell, Essays, IV: 394; III: 171.

Wells, Correspondence, I: 235-236; Wells, Experiment in Autobiography, p. 430.

<sup>12</sup> Ibid., I: 328-329.

<sup>13</sup> lbid., l: 233-234; 268-269.

<sup>&</sup>quot; Ibid., I: 268-269.

<sup>15</sup> lbid., pp. 54, 62, 68-69, 75.

<sup>&</sup>lt;sup>16</sup> Haynes, H. G. Weils: Discover of the Future, pp. 39-66.

deduction. Wells revealed in his The Future in America (1906), that he used three methods of forecasting: a first of "fantastic exaggerations, fantastic inversions of all recognized things"; a second of setting "to trace the great changes of the last century or so", producing these "in a straight line and according to the rule of three"; and a third of "the valiant inconclusiveness, the related creativeness of philosophy". The second method, the "rule of three", was his favourite. To illustrate the method he assumed that the maximum velocity of land travel in 1800 was 12 mph, increasing in 1900 to 60 mph, and forecast an increase by the "rule of three method" to 300 mph in 2000. As a modelling technique, he took contemporary trends and exaggerated them. Wells explicitly stated that his first novel set wholly in the future, When the Sleeper Wakes (1899), was written according to the "rule of three" method 18.

Wells's use of scientific methods to predict the future lent him authority and credibility with reviewers and readers. His attention to science and detail at least partly explained his popularity with the thinking, reading classes above the more lantastical novels of Jules Verne. A review by Arnold Bennett in Cosmopolitan Magazine of The First Men in the Moon (1901) observed:

"Those who prefix "pseudo" to the scientific part of Mr Wells's novels are not the men of science. One may pleasantly observe the experts of Nature, a scientific organ of unrivalled authority, discussing the gravitational phenomena of The First Men in the Moon, with the aid of diagrams, and admitting that Mr Wells has the law on his side."19

Beatrice Webb similarly considered Anticipations (1901) to be the work of "a powerful imagination furnished with the data and methods of physical science, working on social problems."20 A review by Wells's friend and fellow student at the Royal College, Ray Lankester, stated in Nature magazine that Wells's "thorough knowledge and considerable training" in science provided his works with a "scientific accuracy of the abundant details", placing him above Swift and Jules Verne21.

Given Wells's preferred method of forecasting, and the attraction of his scientific method to the critics, it is not surprising that his works should have a feel distinct to environment of 1890s London and the concerns of its urban intelligentsia. Wells's work is dominated by three issues preoccupying late Victorians: the impact of science and technology on society; class understood as the conflict between capital and labour, and the impact of new means of communication on cities and geography. The preface to Anticipations (1901) acknowledged that his forecast futures directly reflected contemporary preoccupations and trends<sup>22</sup>. Wells did not portray a consistent future and his works contain some mutually exclusive projections: he could not decide who would, or should, lead the society of the future. Wells most critically argued the need for the benevolent control of science in The Island of Dr. Moreau (1896), in which a scientist conducted grafting experiments on animals, but in his Anticipations (1901) and A Modern Utopia (1905) he forecast an administrative and governing elite in a future New Republic of men schooled in science. In Anticipations (1901) he wrote: "The men of the New Republic will be intelligently critical men, and they will have the courage of their initial conclusions."23 The Time Machine (1895) characterised the social dynamics of the future as a destructive conflict between the forces of capital and labour, personified in the Eloi and the Morlocks. In When the Sleeper Wakes (1899), Wells anticipated a despotic governing oligarchy, driven by the forces of capital and enslaving the human race. The root cause of tyranny had been the extension of the voting franchise in Victorian England, leading to the massing of

<sup>&</sup>lt;sup>17</sup> Herbert George Wells, <u>The Future in America</u>. A Search After Realities, London: Chapman and Hall, 1906. pp. 11-16.

Wells, The Future in America, p. 12.

<sup>&</sup>lt;sup>10</sup> Arnold Bennett, <u>Cosmopolitan Magazine</u>, xxxiii (August 1902), p. 456.

<sup>20</sup> Webb, Our Partnership, p. 226.

<sup>21</sup> E. R. Lankester, Nature, Ixv, Supplement (13 March 1902), iv-v.

<sup>22</sup> Huxley, Anticipations, p. 4.

<sup>23</sup> lbid., pp. 271, 278.

power in corrupt political parties which were swiftly taken over by the men of capital, and by implication slavery of the working class:

"The change had already come in the nineteenth century. The franchises had been broadened until it included masses of ignorant men, "urban myriads", who went in their featureless thousands to vote together. And the natural consequence of a swarming constituency is the rule of the party organisation. Power was passing even in the Victorian time to the party machinery, secret, complex, and corrupt. Very speedily power was in the hands of great men of business who financed the machines. A time came when the real power and interest of the Empire rested visibly between the two party councils, ruling by newspapers and electoral organisations – two small groups of rich and able men, working at first in opposition, then presently together."<sup>24</sup>

While Wells' futures were run by the oligarchies of capital, the lot of the late-Victorian industrial working class improved materially, but ils liberty had been taken away. In <u>When the Sleeper Wakes</u> (1899), Graham inspects the working class of the future and finds the near-eradication of disease, but the annihilation of individual liberty:

"It astonished him to realise how little the common man had changed in spite of the visible change in his conditions. Life and property, indeed, were secure from violence almost all over the world, zymotic diseases, bacterial diseases of all sorts had practically vanished, everyone had a sufficiency of food and clothing, was warmed in the city ways and sheltered from the weather - so much the almost mechanical progress of science and the physical organisation of society had been accomplished. But the crowd, he was already beginning to discover, was a crowd still, helpless in the hands of demagogue and organiser, individually, cowardly, individually swayed by appetite, collective incalculable [...] He thought of the hopes of his vanished contemporaries, and for a moment the dream of London in Morris's quaint old News from Nowhere, and the perfect land of Hudson's Crystal Age appeared before him in an atmosphere of infinite loss." <sup>25</sup>

Wells was, however, more enthusiastic about technology than about science or the future of the classes. His futures featured mechanical marvels and inventions in abundance. To cite a recent editor, When the Sleeper Wakes (1899) features elevated walkways, an enclosing dome, television and video, aeroplanes, wind-driven power generation, super-roads, a form of aerial wire-transport, muzak, distance learning, psycho-surgery and hypno-learning<sup>26</sup>. When its hero, Graham, awakes from the nineteenth century after a centuries-long sleep, the difference of the future is signalled by technology:

"He was not in a bed at all as he understood the word, but laying naked on a soft and yielding mattress, in a trough of dark glass. The mattress was partly transparent, a fact he observed with a strange sense of insecurity, and below it was a mirror reflecting him greyly [...] In the corner of the case was a stand of glittering and delicately made apparatus,

<sup>&</sup>lt;sup>24</sup> Herbert George Wells, When the Sleeper Wakes, ed. John Lawton, London: Everyman, 1994, pp. 121-

<sup>122.</sup> 

<sup>25</sup> lbid., p. 120.

<sup>26</sup> Ibid., xxxvii-xxxviii.

for the most part quite strange appliances, though a maximum and minimum thermometer was recognisable."27

Yet the technology which Wells forecast for the future was either already in existence, or was been widely discussed in the 1890s: in <a href="Anticipations">Anticipations</a> (1901) he wrote that late Victorians were "in the beginning of a new time", a "whole wonderland of novel space" manifested by the invention of mechanical traction, the telephone and the telegraph. Wells predicted the wide-spread use of the car, citing the experimental motors of the 1890s with "their convulsiveness, clumsiness, and, in many cases, exasperating trail of stench", predicted the invention of the aeroplane, the tank and their use in war, based on the work of contemporary experimenters whom he cited by name. He could not believe, however, that aeroplanes could be armed, due to the problem of recoil, and imagined an aeroplane as a "practical navigable balloon", propelled by inflatable gas bags. The technology of Wells's future was based less on the visions of a crystal ball than on existing innovations and experiments of the 1890s, multiplied by his favourite method of "the rule of three".

Wells showed more consistency in predicting the impact of new means of communication and travel on society. He predicted that the rapid advances in travel, and communication through the telephone, would have a profound impact on the geography of individual countries, if not the world. In Anticipations (1901), Wells observed that the revolution in communication was already having noticeable effects on the late Victorian world. These included the rapid growth of cities, the populating of the American West and the entry onto the world stage of China 30. When Wells applied the "rule of three" method to existing contemporary trends, his futures were replete with a self-acknowledged sense of gigantism. The hero of When the Sleeper Wakes (1899) found it hard to imagine that "nearly all the towns in the country, and almost all the villages", had disappeared. The revolution in communication, created first by the railway and then the Eadhamite super-road, had made the country village functionally obsolete. In their place stood the big towns, dwarfed by the giant metropolis of London, drawing "the worker with the gravitational force of seemingly endless work, the employer with their suggestions of an infinite ocean of labour. Similarly, in Anticipations (1901), Wells predicted that the Londoner of 2000 would "have a choice of nearly all England and Wales south of Nottingham and east of Exeter as his suburb", as the continuing revolution in travel and communication would shrink the country to one to hours' travelling time from London 32.

But not all readers found that Wells' explicit references to contemporary trends created a believable future. Some thought his experience of late Victorian England somewhat limited. Beatrice Webb believed that Wells' futures betrayed his lower middle-class origins: he was "totally ignorant of the manual worker, on the one hand, and of the big administrator and aristocrat on the other." This twin ignorance led to a mis-reading of the existing social structure and an exaggerated role for men of capital and science<sup>33</sup>. George Orwell considered that Wells, like Charles Dickens, belonged to "the non-military middle class", leading to "an invincible hatred of the fighting, hunting, swash-buckling side of life, symbolized in all his early books by a violent propaganda against horses. "<sup>34</sup> The <u>Saturday Review</u> went further and criticized <u>When the Sleeper Wakes</u> (1899) for placing too much of the present in the future, with an over-emphasis on mechanical wizardry:

<sup>17</sup> Ibid., p. 20.

<sup>24</sup> Wells, Anticipations, pp. 224-225.

<sup>29</sup> Ibid., pp. 189-192.

<sup>30</sup> lbld., p. 3.

Wells, When the Sleeper Wakes, pp. 116-117,

<sup>32</sup> Wells, Anticipations, p. 46.

<sup>33</sup> Webb, Our Partnership, p. 231

Onwell, Collected Essays, Ill: 169.

"Our prime complaint of this book is that the future proves too much what we should be disposed, on hasty reflection, to picture it. There is great mechanical progress, but always on existing lines, and ...[in] so much detail, and in such an obvious direction, that we are often wearied. Much of the description, too, has the unreality of a nightmare rather than the realism of a romance." 35

Last but not least, Wells admitted towards the end of his life that some of his predictions had turned out to be embarrassingly wrong. Wells witnessed two world wars, praised and then dismissed the League of Nations as "a sham world parliament". He regarded his greatest error as failing to predict the Russian Revolution of 1917 and "the possibility of a modernized planning regime arising in Russia – of all countries." Because Wells considered Russia in the 1890s to have missed the communications revolution of Western Europe and had few if any railways, he thought it would become "only another and vaster Ireland". Later visiting Soviet Russia and meeting Stalin in person, he admitted that he "quite out about Russia." Because it was not discussed in the 1890s, Wells failed to predict the computer at all.

The predictions of Wells in the 1890s can tell us a great deal about predictions of the future and the environment in which they are made. Wells was a commercially successful author who tailored his publications to meet the preoccupations of his readers and late Victorian England. His predictions were commercially led: his readers paid to read them and may have read what they wanted to see. The predictions were furthermore based on the "rule of three" technique, gathering the trends and inventions of his present-day society as he saw them and extending their development into the future. It is hardly surprising, therefore, that some of his predictions carry in retrospect an uncanny accuracy: Wells lived in a period of rapid innovation and the technology of his novels had either already been invented, or was being discussed. Other predictions, however, reveal just how contemporary Wells's predictions were. His concerns with class, the conflict between capital and labour, and the merits, or dangers, of government though an enlightened, rational elite place him firmly in the mind-set of late Victorian social commentators and reformers. The predictions of Wells are fundamentally a way of accessing, understanding and interpreting his peculiar present. To quote Arthur C. Clarke, writing predictions of the future a century after Wells was born: "It is impossible to predict the future, and all attempts to do so in any detail appear hideous within a few years. 38 The genius, and limitation, of Wells was to grasp the innovations of his time and to realise that they would occupy part of the centre-stage of the present. But while his time machine remained only a device of Fiction, he was unable to see the whole.

<sup>&</sup>lt;sup>35</sup> Saturdays Review, 27 May 1899, cited in Wells, When the Sleeper Wakes, p. 230.

<sup>35</sup> Wells, Experiment in Autobiography, pp. 572, 581-582, 591, 611.

<sup>37</sup> Ibid., pp. 556, 700-702.

<sup>&</sup>lt;sup>38</sup> Arthur C. Clarke, <u>Profiles of the Future: An Inquiry into the Limits of the Future</u>, London: Pan Books, 1983 (first published 1962), p. 9.

## **GRESHAM COLLEGE "MONDAYS AT ONE" LECTURES**

# London in 2020 - a view of the forces shaping the future of London.

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The common element from all of these contributions is that they originate from futurists who have been thinking systematically about the forces which will affect us over the next decades.

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Global Business Network is at 106 Business Design Centre, 52 Upper Street,, London N1 0QH

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## **WORK AND TRADING IN LONDON IN 2020:**

Roger Camrass, FirstMatter

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#### Welcome from the future!

I have spent my last four working years at SRI - an organisation better known in Europe as the Stanford Research Institute. Founded over 50 years ago, SRI has about three thousand people mostly located in Silicon Valley who create new technologies that will shape our future. In fact, we conduct research in over a hundred different fields of science and technology – we even invented the first house-hold detergent, Tide, and patented the mouse. So we have a number of important innovations to draw from.

What I do personally, as a futurist, is to provoke senior executives around the world to help them think differently about the way the future could be. And there's no certainty about the future: it could be many different things. Interestingly, to an optimist the future might be a wonderful place, to a pessimist the future might be a temble place, but the interesting thing is - they'll probably both have the same thing happen to them! So you've got to prepare yourself - hopefully we're all optimists in this room.

## Enter the Age of Anxiety

Now let me repeat a phrase that I heard spoken frequently a year ago, well before the trouble in the financial markets. People were saying to each other, particularly people

in the City of London and New York, "if the times are so good why do we feel so bad?" This was when the stock markets were averaging 40% compound growth. There was no possible reason why people should feel so pessimistic about the future. And then, as you will all remember, a famous film—Titanic was released. \$200 million was spent on making the film, and the producer was very nervous when the film first came to the market. He could not see how he could get an economic return on his investment. We assured him that he would get an exceptional return on it, because the theme was about 'anxiety'. We were proven correct as the box office netted over one billion dollars!

And it is amazing how this world, despite the success we've enjoyed over the last decade or two, has a terrible sense of foreboding, or anxiety, about the future. This is because the future today appears so uncertain to us all. My task for the next hour or so is to give you a glimpse of what I believe the future may be. And my talk is going to be provocative. I don't pretend that we in SRI understand the future any better than yourselves, but at least we've thought about some frameworks, and I'm going to share these with you today.

Ralph Waldo Emerson said: This time like all other times is a very good one if we but know what to do with it'. I think our current situation presents an enormous challenge particularly to the new generation coming to work in the City. How do we exploit the opportunities that present themselves, because they are so bewildering in scale and quantity? Will London be on the vanguard of change, or be left out in the cold? The answer is surely in your hands.

## Coping with the Complexities of Change

I'd like to journey back 30 years to a moment in time when a famous futurist, Alvin Toffler, published a book called Future Shock. He stated in that book 'there is change in the rate of change'. Now today that sounds perfectly obvious, but believe me, when he came out with that notion 30 years ago it was a revelation. And interestingly, as we come to the very last weeks of the 20<sup>th</sup> Century, we're beginning to say there's not only change in the rate of change, but a confluence of all change. It is not just changes in technology, or economics, or politics or the social agenda. It seems to me that there is change occurring in every dimension of society today. And it is the interaction of these changes that's producing the very dramatic effects we observe on the stock market and elsewhere.

Let me give you some illustrations of the extent of change. In the last ten years \$750 billion of new wealth has parachuted into Seattle. Just think about that. This is partly due to the Microsoft phenomenon - accounting for \$250 billion worth of new wealth. Now we hear that Yahoo! is capitalised at the same price as Unilever. Wealth is beginning to appear from areas that we never even conceived of before. It is not about displacing production in Asia or in Africa or in Europe. This is entirely new wealth, the sort of wealth that we've never experienced or seen before. And that really does give us some food for thought.

At a technical level, the rate of progress is even more daunting. I don't know if any of you have recently bought a singing birthday card, but it costs you about £3 in London. After the birthday celebrations are over and you throw that card into the waste paper basket, you've disposed of the same amount of computing power that existed in the whole the world in 1950. That is an extraordinary revelation. Again, if any of you are lucky enough to own a BMW Seven series, you've got as much computing power on board in that car today as the Apollo 11 spacecraft needed to land the first man on the moon. And if you extrapolate these trends forward, in seven years' time SRI predicts that a regular household dishwasher will have as much computing power as the Apollo 11. This presents detergent suppliers with an entirely new challenge!

With these developments in mind, let me welcome you to the Trillennium. Let's rename the next decade as the beginning of the Trillennium, not the next Millennium. Why? Because I anticipate the first Trillionaire prior to 2020, and the first Trillion dollar corporation, too. I doubt that Bill Gates will be the first Trillionaire. It is more likely to be a spotty youth who hasn't even finished school yet. But he or she will be the beneficiary of the most important force of the new world – the law of increasing returns, made possible by global connectivity. We are indeed heading towards a new era, not just a new Millennium!

## **Tools To Explore An Uncertain Future**

My thesis in today's lecture is that we are entering a point of major transition, the like of which is only seen every five hundred years. You have to look back, in our view, five hundred years to see anything as consequential as the current changes we're experiencing. It was five hundred years ago that the European Renaissance took place - a time during which great thinkers came together like Da Vinci, Machiavelli, and Locke. These people collectively altered the shape of society in the space of little over fifty years. The outcome was the invention of science, economics, medicine and the current industrial age.

And again, one of the fascinations of the Renaissance period is that it wasn't just the individuals who had those great thoughts, but it was the communication of those thoughts that created a revolution. In particular, it was the Gutenberg printing press that enabled new ideas to be conveyed to the masses, not just the clerics. In today's language, the Internet looks remarkably like the Gutenberg printing press on steroids! Slightly facetious, but there is an important point here. Transformations are often enabled by technology. However, it takes great thoughts and great people to change society in a way that we believe society is being transformed today.

We worked with Shell in the seventies to develop a tool to explore an uncertain future – scenario planning, which Gill Ringland writes about in her excellent book. The value of scenario planning is to examine all possible outcomes of the future: not to actually pinpoint one particular outcome. Scenario planning creates a set of plausible alternatives within which the future is most likely to transpire – often described as the window of uncertainty. And to carry out scenario planning one has to look at all the different dimensions that influence the structure and shape of that future.

These dimensions include policy, economics, the social agenda and technology - PEST. We believe that these are the main drivers that will shape tomorrow's society. And given that we are at a major transition point, a five hundred-year delta, it is appropriate to ask what may happen to each of these critical elements. By doing so, we are able to see more clearly how we might work and live, particularly in the City of London, in the next 20 to 30 years. So I'd like to share some of our ideas with you about these key dimensions of change.

## **Technology - Becoming Connected**

Let's look first at information technology. IT is having a profound effect on everything we do. I mentioned the greeting card, but there are so many different aspects of our lives today that are influenced by IT. The important driver in the next 20 to 30 years will be 'connectivity', because that's the most valuable benefit IT gives us. It is the ability to connect across the world, across communities, across society, in a way that could never have been imagined a hundred years ago. The telephone itself is well over a hundred years old.

And it is quite interesting that when the mayor of New York was first shown a demonstration of the telephone by Alexander Graham Bell, the Mayor said: Well, this is an absolutely fascinating device but what could I possibly do with it?' Graham Bell responded: 'Imagine that if we could have many such telephones, you could talk to people in other cities across the United States'. The Mayor was surprised by Bell's logic. He responded: 'why would I want to do that? I don't know any people in other cities'.

What comes first, the chicken or the egg? Connectivity gives us the ability to communicate across the world. But why do we communicate? Because we have friends in remote locations. And today, it is the extraordinary capability of the Internet itself that sets the standards by which we communicate. We have an emerging language formerly known as English' which is becoming the language of the Ethernet. Whether you're in China or Japan, London or New York, this language enables you to communicate together. The fascination for us all is not just communication between people: today there are about on one billion telephones and 200 million PCs in the world, but there's six billion microprocessors. The real interest is to contemplate how embedded technology will create even more complex and powerful networks than the inter-personal networks that we're all so dependent on to today. And what of the other factors at work?

## Social Agenda - The Consumer Takes Control

There are four simple words that continuously reappear when one considers consumer aspirations in the new social order. To Go, to Be, to Do and to Know.

One is to <u>Go</u>: despite advanced communications technology we still want to travel, we want to experience so many different things and we're now beginning to talk about entering the 'experiential economy'. Well done, BA, on the adoption of this word for its new airline.

We want 'to <u>Be</u>' ourselves: we want to be individuals, we do not want to be conditioned by mass markets and mass media. As Alvin Toffler has so many times emphasised, the world is de-massifying, and so are we as consumers. No more mass marketing, mass production, mass consumption.

We want to '<u>Do</u> it', just as the Nike advert says. A whole new generation of consumers are just 'doing it' by wearing the Nike swish sign. What they are really doing is confronting all the institutions that would dearly love to tell them what to do – parents, teachers, and employers.

And, most importantly, we want 'to <u>Know</u>'. The Internet gives us almost infinite access to knowledge and to information, as well as an ability to carry out transactions – anywhere, anytime, any-place. We want to shop, communicate and learn electronically through the Internet. In time, we will want to 'Go Virtual'.

We also want to 'have fun'. I think the most interesting new concept to emerge from recent work is the ideology of 'having fun'. We are working for one of the workd's largest toy manufacturers, who intends to bring fun to the work place. And I think there's a serious thought behind the concept of having fun. When you wish to be at your most creative you need to have fun. Children are very creative and very innovative, and they have fun being innovative. I think we as adults have got to go back to our own childhoods, and we've got to learn to have fun again. London in 2020 should be a 'fun' place to 'be'.

## Economics - Based On Intellectual Property Not Physical Goods

Economics is the primary driver behind social and political order – defining the principle sources of value in society and the mechanisms for its distribution. With the five hundred-year delta in mind, what will be the new economic model to replace the industrial age? How will this differ from today's concepts of material wealth and well being? Most political regimes of the world are based on managing the disparity of material wealth – I want what you have got: I vote Labour, or I don't want to part with my material possessions: I vote Conservative. Many of us talk about the information economy, and we know that the industrial economy is gradually coming to an end, but do we have any idea about what the information economy is based on?

I'd like to share with you a particular view of the new economic order. And I'il start by introducing a popular American word, 'stuff'. In the US everyone talks about his or her 'stuff' – good stuff, really nice stuff. And we've become extremely effective over the last hundred years in producing more and more stuff. So much so that the poorest households in North America today have as much stuff as the average middle class households had in 1971. They all have their refrigerators, washing machines, cars, toasters, etc. And the better and faster we become at producing new stuff the more difficult we find it to sustain differentiation.

One major furnishings company has a campaign to make the garage the new 'decoratable' space in your house. And you have to ask yourself: what are they trying to achieve? Most of us today spend much of our domestic life in the kitchen. 20 or 30 years ago a kitchen was a scullery, no one would ever dream of spending time in the scullery. Today the kitchen is the most popular room in the house, and certainly the most highly invested in terms of technology and decoration. So now corporations are looking for new frontiers: the garage becomes the new decoratable space! That may sound farcical today, but I'm sure that in 10 or 20 years' time we'll be spending most of time in the garage.

Where does the material rat race end? In the West, we've all got enough stuff to keep us happy for several lifetimes. Do we really want more? And the interesting aspect of stuff is that whatever Sony produces in the laboratory this week, Philips or Fuji will be able to produce next week. In a sense the world has become a giant copying machine, and there's almost no possibility of sustained differentiation in producing better stuff. Thus the value crisis for companies in the last moving consumer goods business.

So the big corporations of the world are asking, how do we sustain our value in a world that has become a giant copying machine? How can we generate new value for the shareholder in this highly competitively, highly tuned production economy? I recently talked with the CEO of BP, and he had to admit that the fuel that BP puts into your tank isn't a million miles different from the fuel that you'd receive if you went to a Shell or a Texaco filling station. There is absolutely no difference in the base product. And so many of our major industries, both production and service based, are being commoditised. The real question that chief executives are asking themselves is how do we escape from this commodity trap. Because there's really little value left in producing yet more stuff.

The fact that Yahoo! has reached the same market capitalisation as Unilever must shed some light on this dilemma.

# Give Me What I Need

The key question facing us as we enter the 21<sup>st</sup> century is that if the production economy loses its current organising role, what will take its place? I'm going to describe a concept that we're developing around intellectual property. And I don't refer to rare manuscripts in the British Library. I mean knowledge of your personal styles, your tastes, and your individual characteristics. That's your own intellectual property: where I want to go on my holiday, what music I like to listen to, how I like to spend my leisure time. That's becoming increasingly valuable information. And the interesting thing is that such information could be hamessed to help you better understand yourself – to be, to do, to go and to know.

Let me just give you an example of some work we've recently done for a US bank. They have an enormous customer base: several million accounts. We suggested to them that they identify those customers who have moved house more than twice. The Bank did a lot of digging into this segment of their customer base. It is a relatively modest population in terms of numbers, but what they found was that, typically, after six months, such a house buyer exhausts every line of credit, with the installation of a

new kitchen, landscaping the garden, repainting the house or whatever. And it is a very visible group.

So five months after a move, we suggested that the Bank rang its customer up and asked 'How would you like some more credit?' The customers couldn't believe it. They were so excited; they said: 'how did you know? Of course we'd like some more credit.' And, believe it or not, that has become the most profitable, the safest line of credit this Bank operates today. It is all about anticipating need. Every body wins!

It is also about providing you as individuals with more information, more insight into your own interests and habits - 'Help me better understand myself through my interaction with you'. And again we've done some fascinating work with Sony in New York in their CD superstores. The problem with one Sony store was that Virgin opened up just one block away offering CDs at a 12% discount. Now, there really wasn't much that Sony could do other than to drop its prices. And that was pretty bad news because they were only just breaking even. We offered to create a different value proposition. We worked with Sony Inc. to create a multimedia booth where you can walk in and the first thing you hear is a computer voice that asks 'tell me a particular recording artist/musical artist that you'd like to listen to today'.

Trying out the booth on a sultry New York summer afternoon with lots of attractive young babes wondering bye, I remembered my student days and said "I'd love to hear The Who live at Leeds". I hadn't heard that record for probably 20 or 30 years, and when the music came wafting into the booth, lots of memories flooded back. As the music stopped the voice asked 'would you like to hear another artist?' I chose the Steve Miller Band, and then Eric Clapton – all from the seventies era. This went on six or seven times until the voice said 'Would you like to know which artist influenced four out of those six people you've just listened to?' And of course I said Cool! – in a true American accent. It turns out to be a guy called Chess Atkins whom I'd never heard of in my life. But guess what? When I walked out of the CD store I was carrying three of his albums. And I didn't mind paying a 12% premium to buy them, either.

The point here is that we are recognising that commercial success is first and foremost about influencing and anticipating consumer choice. The consumer's in control. But because consumers don't always know what they want, it is an interaction, a dialogue, between the providers of products and services and the consumers that will lead to a clearer anticipation of personal preferences and needs, and give more insight about what you genuinely want. Today we receive so much junk mail; we'd really like help to know what we want.

### Securitising Your Own Intellectual Property

Now, that leads to an even more bizarre and intriguing proposition. David Bowie last year issued bonds on himself; based on the future earnings of his own intellectual property – and he raised \$60 million. The question to be asked is 'how much do you think you could raise on your own intellectual property' – i.e. the value of the knowledge about all the products and services that you might buy in your lifetime. The answer may well be in seven figures!

We are discovering that information about a transaction is becoming more valuable than the transaction itself. For example, the Official Airline Guide (OAG) made more money than all the US airlines put together over the last ten years. Getting back to the individual, the information about what you will transact in the future, your choices, and how those convert to the purchase of products and services, could have real economic value. And the very interesting question is who has ownership of that economic value? Is it your personal intellectual property, or is it the banks, the supermarkets, the airlines, who are at the moment sucking you dry because they're recording every transaction and trying to understand from those transactions what particular preferences you have.

It is becoming apparent to all of us that information is increasingly an abstract object that is tradable. Data mining is the wrong paradigm. Data interpretation is a two way, interactive process, and not a historian's journey into our personal past transactions.

And that leads us to a new economic model. We call it intimacy economics, based on the value of personal intellectual property. It gives us a rational for the cutrageous market values of Yahoo! TheGlobe.com and even Dixons. Such a model presents almost infinite opportunities to reuse such intellectual property to assist each of us to pursue richer and more satisfying lives. Surely a good prospect for Cities in the next Millennium?

### Politics - Going Global But Acting Local

Finally, let us consider the dimension of policy. In a world of satellite communications and the Internet, how will governments keep a grip on their economies when high earning members of the population can transfer their lives and businesses into virtual space? This is beginning to be a major problem already. The nation state is eroding fast in favour of regional trade zones — Europe, the Americas, and the Far East, commonly referred to as the Triad. These threaten to exercise enormous power and sovereignty over our lives.

But at the same time, we're beginning to recognise once again the importance of our local communities. The rise of the City itself seems to be a key landmark of 21st century life. We've done some very simple calculations that suggest in the year 2020, 72% of the world population will reside in only 580 cities of the world. Instead of us all becoming creatures of the countryside where we can enjoy the quality of the air, we're rushing back into these big cities. What is the attraction of the City that encourages such behaviour? When every City becomes overcrowded, costly, stressful, why are we returning in such numbers? There are some interesting parallels to the European renaissance.

We use one word to describe the compelling nature of tomorrow's City – the 'Mythopolis', or 'City of your Dreams'. I believe that in the new economy cities will attract the most creative, innovative people, and give them the right social, economic and domestic environments to maximise their potential. That's why I personally came down from Yorkshire some 20 years ago to live in London. There seemed to be a compelling power to cities such as London and New York. Who doesn't to spend some time in Manhattan? What we observe is the City becoming the nation state of the future. London is going to have a population of 15-20 million people. It is already the size of most countries and we are about to elect a mayor, who in many respects will become every bit as important as most state presidents. Should he or she sit in the United Nations. Scottish devolution fades into insignificance here!

How will the forces of technical, economic, political and social (PEST) change interact and evolve?

We've talked about global connectivity; new economics based on intellectual property, the consumer taking control, and border-less nation states. How does man and machine coexist in this new era? If you look back to the production economy, the emphasis was on utilising physical assets, with their related financial metrics and measuring systems – SAP hasn't done too badly on this meal ticket. And interestingly, the accounting profession today is built entirely around such metrics. It can compute and measure in infinite detail just how much a company is worth in terms of it's physical and cash assets. Everything else is neatly pigeon holed into a vague item called Goodwill. As we move into the New World, our systems of metrics must change. As our measurements change, so do we! Just imagine how much goodwill Yahoo! would represent in a take-over!

### From Corporate Body To Corporate Mind

Microsoft has a market value live times that of General Motors. And yet the turnover of Microsoft is a fifth of General Motors. Gauged by this example, we are moving into a new economy where physical assets are peripheral. GM is a classic example of a company with a massive physical manufacturing and distribution infrastructure. It takes several years to launch new products, and does so on a global scale — mass-produced. The new economy is characterised by intellectual assets rather than physical assets that are rapid to create and reproduce. We are moving into a world where corporate 'mind' rather than the corporate 'body' represents value. At the heart of the corporate mind is information: patents, knowledge about customers, knowledge about processes, the quality of the human resources. This is the source of new value. Just look at Dixon's shares after it entered the Cyber economy.

Successful corporations will learn to exploit and share their knowledge base, inside the organisation and increasingly outside as well. A lot of people are now beginning to divert their attention away from the traditional balance sheet based around physical assets to focus on intellectual assets. There is some fine work being done at the moment to quantify intellectual capital as the primary asset of a corporation. For example, Scandia, an insurance company in Sweden, publishes an addendum to its annual report that quantifies the value of its own intellectual property. And it believes that by doing so it has added 30% to its share price. In the future we expect stock markets to value and trade intellectual capital.

The City of London like any other historic institution may be slow to respond to these powerful forces at work, but recognise them it must. New metrics will need to be adopted to assign value to corporations on our stock market if we are to retain leadership as a major financial marketplace. Would Yahoo! have chosen the City for an IPO? I think not. How can we attract innovative UK companies to operate out of the UK rather than migrate to more lucrative capital markets such as California or New York? The value of our stock market could drain away to a mere residue of its current standing.

#### From Corporate Mind To Corporate Soul

We are making progress in recognising the importance of the corporate mind, but what of corporate soul? We believe the next fundamental source of value beyond intellectual property will be based on relationships. And relationships are built on trust. In a world built upon intimacy economics, how much trust are we as consumers prepared to place in our suppliers, such as our banks, telecommunications suppliers, retailers? After all, the trust that we can develop between external organisations and ourselves will determine just how much of our own personal information we are prepared to share.

And it is interesting to ask yourself who do you trust in society, who do you go to talk to about very personal things. I doubt if it is the high street bank. I doubt if it is John Lewis. Maybe a pension company such as Equitable Life. Maybe you talk to Virgin stewardesses, but who knows. It is going to be very interesting to ask which will be those organisations that will embody most trust in the 21<sup>st</sup> Century. It may be the not-for-profit organisations rather than current commercial organisations. Trust will be an increasingly important aspect of being in business because only by creating trust will you be able to exchange valuable intellectual property. And empathy and relationships in our view are going to be all-important in determining the success and the value of corporations in the future. The City has been well known for the trust it engenders — my word is my bond. This could be a key asset for the future.

Pushing the model further, we are going to need the co-operation of more than one trusted party to build really valuable information bases about personal habits and life styles. Partnerships built between the banks, the retailers, the manufacturers, the oil companies will need to be forged. Each party is looking today at the consumer through

a narrow telescope. What we seek as individuals is the broader value proposition that mirrors our need to go, be, do and know.

Lets take the oil companies such as BP. Instead of selling us petrol by the litre, BP should be giving us the opportunity to go where we want to go. This could put it into the travel, education or leisure business. Airmiles is another interesting example. Instead of redeeming travel points for airline tickets, it could help its loyalty customers to better understand what they would want as a 'treat' – just imagine how powerful, and potentially dangerous, the knowledge of what each of us regards as a 'treat' could be? There are so many broad- based human desires and needs that we have, and they're not well satisfied today because most of the providers of products and services are very narrowly focused. We believe that in the future we'll be talking not of products but elaborated services where different companies will come together to satisfy a much increased sector of needs.

How do we begin to determine and exploit the full scope of human need and desire? If you consider the very basic things that we need as human beings, they include: education – not just in childhood, but education for life. We need financial security. We don't just want a bank account or an insurance policy. We need someone to work with us and advise us throughout our whole lives, even take the risks with us. We want physical well being rather than the occasional visit to a doctor when we are ill. We want physical and emotional security, not just burglar alarms. The list is endiess, but difficult to imagine in our world of product and service silos.

And this convergence of interests is just beginning to surface. Boardrooms are awash with executives from other sectors talking about new partnerships. We believe this is something of a random process today, but as we focus more and more on the broader needs of the individual, these alliances or partnerships will begin to make more and more sense in the future. We have been organising cultural exchanges for many years to promote such new age propositions.

The most exciting aspect of all this is the prospect that the primary social processes such as education, healthcare, employment and leisure are beginning to re-engineer themselves. Students of MIT's programme 'Management in the Nineties' will understand that the expansion of information systems across large organisations in the late eighties stimulated process redesign opportunities. Thanks to low cost PCs and the Internet, these systems are now spilling out across society at large. The ubiquity of IT has created the fertile conditions for re-engineering on an unprecedented scale. London as a City needs to consider its leadership role in enabling these macro processes to reform and reshape. May be the new Major should call us in to reengineer the City – its institutions, structures and processes? Berlin is well down this path already!

#### First Steps Towards Sustainability

What are the enduring qualities that will sustain London as a leading city of the world through such turbulent times? We were asked recently by Shell to investigate 'what is success in business?' and we talked to over 90 companies who had been in business more than 150 years. We asked them what is success all about and how had they sustained themselves in the last 150 years. And the answer came back that success is about 'being in business a long time' — certainly a good banner for the City. All of these companies cited four factors that had contributed to their longevity.

The first was the availability of capital, particularly low-cost capital. Many had gone through trading hiccups in the 150 or so years of their existence. Only by having deep pockets or patient sponsors could they ride out these storms. Many good companies have perished through poor liquidity.

The second one was very important – sensitivity to the environment. And it is interesting how companies have fads. They talk about the customer: we're in business

to serve the customer. Two years later, we're in business to satisfy the shareholder. Five more years, and we're in business to keep the employees happy. And so it goes on. The reality is that most big companies today have not just two or three stakeholders, they have forty or fifty stakeholders to satisfy. They have employees who worked for the company and then left, people who will work for the company in the future but haven't joined yet, the media, the local community. There are a whole host of different entities that are involved in their survival, and being sensitive to them is a key factor for success.

The third one that is very good for our business as futurists is the tolerance to fringe activities. So many companies have gone right back to the core, to the base of what they're in business to do. Re-engineering shook out a lot of the peripheral activities and focused people ruthlessly on the current business that they're in. Clearly, as we enter such a time of transition and change, one's ability to look at the periphery of what you're doing as well as the core is going to help you to recognise those critical signals of change.

But the most interesting thing that came out of the survey was that of the majority of the companies we talked to, over 80%, were in businesses that were entirely different to the ones they started out in. For example, Nokia was a paper company. Today it is one of the world's leading consumer electronics companies. General Electric earns 42% of its revenues through financial services. That was clearly not what Thomas Edison had in mind when he started the company over a century ago.

#### The Rewards Of Re-Invention

How will London survive and flourish up to and beyond 2020? During the next twenty years we are going to see a torrent of changes so profound that many well loved companies and institutions will cease to exist. New and more powerful ones will take their place. The answer must surely lie in learning to live and work in an increasingly uncertain present and future. It is all about re-invention at a rate that keeps pace with the external environment. Many of us today talk about agility as a key success factor.

I believe that we can go one step further than this obvious statement. Just as boats must navigate every inch of a white water rapid, constantly switching direction, the navigator must also have one eye on the horizon – be it the North Star, or just a stable landmark. In doing so, he or she will not just keep affoat but reach the desired destination. I think that many CEOs and heads of government institutions – not least the City, are too concerned with keeping their heads above water to focus for any real length of time on the final destination. It is the tyranny of the three-month earnings that dominates City minds.

So, my message today is to move your minds forward into the 21<sup>st</sup> Century, look at those four driving forces that will determine the future - technology, political, social and economic development- construct one's own scenarios, and continuously ask the 'what-if' questions. Clearly every company that's going to be successful in the 21<sup>st</sup> Century is going to have to continuously learn to re-invent itself on a moment by moment basis. But they are also going to need a 'guiding star' that carries them through the new era.

# Write Your Five Hundred-Year Plan

And that's why we've been asking companies not to look just at a one-year business horizon or a five-year plan, but to develop a five hundred-year goal. Given that we're going through a five hundred-year transition that makes some sense, and it is often easier to do than to work out a five-year plan! Now, interestingly, there are some really good five hundred-year plans about. We did some work with Coca-Cola, one of the highest capitalised companies in the world, and they have a simple five hundred-year plan – that is, to anticipate your need for refreshment. After all, we will still be thirsty in five hundred years time. They understood that so clearly that they've never veered away from it, always concentrating on the beverage business. Pepsi, its nearest rival,

went into the food business and lost its shirt. Coca-Cola has stuck rigidly to the concept of refreshment, and out sells Pepsi four-to-one!

So rigid is Coca-Cola's vision, we were recently asked to evaluate a new vending machine that their scientists had come up with in the lab, which was actually cold to the touch. As you got near to the machine it felt cold. And they asked 'does this fall in line with our five hundred year plan?' and we said of course it does, it is all about refreshment. You feel as though you need to be refreshed when you're next to this cold thing.

Do ask yourselves: what is my corporate five hundred-year plan? If you have no answer, do give this some serious time and attention. Remember that the citizen of the future is going to take a keen interest in this. And as Dwight Eisenhower once said, "I've always found that plans are useless, but planning is indispensable".

#### Don't Just Stand In The Queue

The future offers us some formidable challenges, but at the same time, the rewards for success have never been greater. We are about to enter the Trillennium. We have one of the most popular and successful capital cities of the world – London, the envy of most other countries. How do we ensure its success, and our prosperity within it?

I have given you some glimpses today of just how different the future might be. But it is not beyond our comprehension. If I could leave you with one firm thought – stay tlexible, stay sensitive to the massive changes and developments that are taking place around you. Just because the financial markets has entered free fall for the moment doesn't mean to say that there aren't vast opportunities to create wealth. \$750 billion has parachuted into Seattle in the last ten years. I don't think there's ever been a greater time for opportunity and yet it is not going to be the big institutionalised organisations of the past that necessarily are going to seize these opportunities. It will take some pretty radical thinking, either at the periphery of those institutions or beyond their boundaries that will yield the highest rewards in the future.

I hope that the talk has stimulated some new ideas, and even some healthy debate. I would enjoy discussing these concepts with you and starting a more interactive dialogue. Do email me at roger@camrass.com.

Wishing you success from the future!

# **GOVERNANCE IN LONDON IN 2020:**

Dr Olver Sparrow, Royal Institution for International Affairs

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The Chatham House forum was established in 1995 by the Royal Institution for International Affairs to provide analysts and planners from a cross-section of business, government and society with a multi-disciplinary approach to strategic foresight. The work of the Forum is intended to stimulate thinking and develop a shared understanding of the forces that will shape the future. It consists of about 20 companies and government departments which have come together to think about the period up to 2020.

#### **Three Critical Dimensions**

One of the main themes we have been developing over this period is that any complex agency, be it a company or a country, operates on three separate dimensions. One of the dimensions is about institutions, or institutional complexity. It is about how the big things get organised and work together. The second is about commerce, or economic complexity, and the third, -none of these is entirely independent- is about social life and development, and how people organise their life and their families around work.

So people are in a hill village in Papua New Guinea are not particularly complex in any of these dimensions. The institutions are the village institutions and the way that people add value is relatively simple. Similar things can be said about day to day life. If we then turn to America we can see that you are dealing with something very much more complex. And it turns out that there is a sort of continuum that runs from Papua New Guinea to the US. There seems to be an evolutionary track that has to be followed. Failure to follow this track results in a Russia or Korea, becoming lop-sided by going too far down one of the three dimensions. And a focus too much on the commercial dimension, for instance, ignoring the institutional side, ends up with the problems currently seen in Japan.

# The Need For New Institutional Approaches

So these three prongs, of instutions, commerce and social development, need to be addressed in a balanced way. The suggestion that we are bringing forward today is that what we in the advanced industrial countries are taking the longest to invent is new ways of coping at the institutional level with complexity - and we are moving into profound complexity. The fact that the world has grown at a fairly steady 3% with a few wriggles from depressions and wars suggests that all of the output that came out of 1898, 100 years ago now, could go into two working weeks. It will go into one working week in 2010 and it will go into two working days in 2015, whether we like it or not. And we are still meeting that with roughly the same institutions we had in 1898.

But we can go further than this. All of the trade in 1949 goes into one day right now. All of the science in 1960 is a daily output now. All of the foreign exchange trading in 1979 fits into one day right now. All of the e-mail from 1986 goes into one day. And we are still trying to cope with this with the same mechanisms for organising our companies and societies.

These ideas have been discussed in te Chatham House Report "Unsettled Times", published in 1996.

## **Navigating Uncharted Waters**

This raises some very profound questions. The 1997's Chatham House Report "Navigating Uncharted Waters" discusses precisely this – the challenges as we move strongly into what are literally uncharted waters on virtually all three axes, and the changes associated with this. Right at the centre of what is driving most things at the moment is increased competition. And there are a number of main forces pushing that along.

### Convergence And Coupling

One is convergence and coupling.

Convergence is a very straightforward idea. It consists essentially of looking around and seeing what best practice is and converging on it. We call it benchmarking and reengineering and locusing and so on. But you buy it off a shelf, as a commodity and when you have finished you are just like everybody else. It is like the Red Queen race where everyone runs laster and faster and if you do stop you are history, and if you keep running it doesn't solve the problem but makes it worse. This is the situation into which we have locked ourselves at the moment. Running alongside this is the demand for cheaper goods, but also quality goods- we want them now, and we also want lots of choices.

The other thing which is happening is coupling and there are two ways of thinking about this. One is the rather conventional one. People talk about globalisation but if you look at the trade statistics, trade outside the OECD is only a few percent. So the amazing collapses in South East Asia may be very painful for the banks, but actually the impact on the whole world is relatively limited. If they disappeared in a puff of smoke it wouldn't make a lot of difference-probably only two-thirds of the year's growth.

However, that said, coupling does happen in a number of other really rather profound ways. One of them is the coupling together of commercial basins within the industrialised world so that how you make the car is now a much more integrated thing than it ever was. For example, when the head of Nissan spoke at the Royal Society, he was saying in essence that Nissan is now surrounded by a nest of suppliers. And in order to be able to make a good new car in the future, these linked organisations have to co-evolve, and jointly decide what the car is going to be like and jointly decide

the nature of the future. In other words, much of the strategy and much of the governance of your organisation is now within a cluster, not within your company. The dotted line which is called the shareholder or the owner doesn't actually describe what is going on or how the choices are made. This is very like nation states also.

Another thing which is happening which is very striking. Think of a medical practitioner sitting in a village in the 18<sup>th</sup> century and what he would be doing. Now what we have is a health <u>system</u>, with a lot of practitioners all coupled together. They have their own dynamic and they have to be managed on their own terms of reference. And, further, they have to be driven in terms of those systems and limits they have set up themselves. Very often the people who are in them know more about them than someone standing on the outside.

And more and more of these systems have been created by liberalisation and opening up. Now we have an electricity industry that has to be managed on its own terms of reference as more people in it know more about it than anybody else in the country. So the professionals are in many ways able to, if not to dictate terms, to determine frames of reference in which the discussion occurs. So these are the virtual communities, the knowledge communities coming into existence and these have to be managed as systems. This is rather new.

#### **Customer Power**

Another major driver of increased competition is customer power. Customer now have far more choice and they have many more ways of getting to markets. There is also the issue of de-integration and outsourcing, which has one really rather prolound implications. If one thinks back to the time of Henry Ford, he used to grow his own rubber trees to make his own tyres and smelt his own iron because there was nobody else to do it. We have moved to a state of economic maturity when you can reach out and find almost anything off a branch. There is somebody there to do it for you and there is somebody who will take it away from you. There are many ways to market and many sources of supply. If you think of it as a chain of beads, those chains are rapidly becoming nets. The significant thing from this perspective is it increases competition because it would be extraordinarily difficult to clone Henry Ford, but terribly easy to clone the little supplier. So the entry barriers have gone.

Then there are the consequences of the substitution of capital for labour with some strong social implications. It is not only changing the nature of work; it is increasing or changing the pattern of exclusion and unemployment. Independently of this we have vastly extended expectations - particularly of the state. And our demographics are becoming extremely unhappy. There are going to be a lot of 'not so young' around: half of Germany will be retired by 2010, for example. According to OECD figures, 80% of France and Germany will be dependent by the 2030: either they will be too young or too old to work. This is quite a number when you think about it.

#### Commoditisation And Liberalisation

Then there is the issue of commoditisation, which has had a far reaching impact on prolitability. As prices come down, we as consumers think this is good. But industry profits disappear. Firms are locked into a race in which product life-cycles contract and sources of distinctive capability are increasingly harder to keep within a firm. If you look at the American market, for example, and you actually get into the numbers and detail, it is not that wonderful. It has come up from the nadir of 1982 but it is just about struggling to achieve the levels of 1976. It is nothing near the golden age of the 1950s and 1960s.

Coupled with that is liberalisation, which has mostly been driven by the desire of the state to officed some of the complexity it has to deal with. What happens looks rather good. For instance, in the 10 years from 1983 to 1993 the total gain from liberalisation

was almost \$40 billion. But these are mainly consumer gains. As far as companies are concerned, it is only about 10% of gain on aggregate. For brokerage, in fact, the gains are negative. The point is that liberalisation is not one of these lovely things that makes life happy. It is a frightening driver of change and it forces competition.

### Substitution Of Capital For Labour

So a cluster of things is beginning to drive competition forward. Substitution of capital for labour is a main component. The cumulative percent increase in the various inputs to US manufacturing since 1959 shows that capital inputs have risen to the point where they now account for up to 80%. Materials inputs have been rising since 1973, while an increasing aspect of added value is the knowledge content-less to do with the steel and more to do with the brand. In terms of white collar inputs, we are getting away with about half as many as we have had. And blue collar workers are simply being designed out of the system, partly through automation, and partly from our just doing things better.

The implications of this are unemployment, because as long as productivity runs faster than output you will get unemployment. In the 1950 – 70's, for instance, OECD figures show that we had about 10 million unemployed. It then started rising steeply and appears to have topped out in 1990. Well, no it hasn't, actually. If you take Holland as the paradigm of Europe, it can compare its formal rate of unemployment of about 7% with that of Europe as a whole of 12%. Except for a few other things: if you add disability allowance, subsidised jobs, social assistance and early retirement, it turns out that between 25% and 30% of the workforce are not actually in employment. In France the equivalent figure is about 43%. The average in Europe overall is about a third of the population.

The European Union and the US make a rather nice natural policy "laboratory". The European Union over the period from 1970 has managed to create about four million jobs. The US created 45 million jobs during that period. Now both of them grew at roughly the same rate over the same period. Real wages in the US during that period, however, hardly changed at all The point is that if you were a median earner in the US then or now, your standard of living is about the same. You may be buying more quality goods, but basically you are earning the same in real terms. Real wages in the European Union, on the other hand, have soared, with very high non-wage costs on top, which means it is very expensive to employ people in the European Union.

And the very nature of work is changing. If you compare the level of skill in a job to unit wage paid, at the bottom end it is simply cheaper to substitute capital for labour. It is cheaper to hire a machine to dig a ditch than it is to hire a gang of individuals. At the top end, things are changing most rapidly, with technologies such as artificial intelligence set to have a major impact on how work is done. In this world the low skill are doubly doomed, while middle skills are under unceasing pressure. And the cognitive elite at the top will find new things to do and do them in new ways. This is quite schismatic in a society.

### The Impact of State Deficits

It is even more schismatic because in the background the states have been running at a loss, except in Britain in 1987 and I think the US in 1998. Otherwise every single OECD country has run at a loss since 1973. If you look at state income as a percentage of GNP compared to state expenditure as a percentage of GNP, expenditure has increased steeply with the advent of deficit spending in 1973. Most of this rise is associated with welfare, which is obvicusly a political choice of how to spend the state's money. This borrowing is the equivalent of about 1.5% on world interest rates. A more striking statistic perhaps is that the average worker in the OECD gets \$100,000 more out of the system than they put into it over the course of their life.

This creates a chronic pressure stemming from the ambition to spend with the capacity to raise money in taxes. The tax side is difficult because, on the one hand, you have the problem of voters just saying no and the second, I think, is the sense that the tax rates are a benchmark and if you go out of line there are problems with attracting foreign direct investment. The third one, which, I think, has worried a lot of those who levy taxes, is the difficulties there will be in a disembodied economy, where most of what is drifting around is knowledge. Actually identifying the audit trail and capturing the money will be a challenge. And if you choose to surface your value chain in Bermuda and pay tax there, you can do that. And the more you de-localise and the more you become a flyweight economy the harder it is to collect taxes.

## Extended Expectations and Demographics

Nevertheless this is not happening to the people who are demanding the money and who have extended expectations. So the net transfers to persons, or subsidies, are rising in virtually all the OECD countries with the consequent effect on government spending. So governments have to make some difficult decisions. If we go back to the three prongs, the institutional one is not really evolving at quite the pace that it might.

Demographics must also be taken into account. In the OECD countries we are getting older. If you go back to , say, 1910, pre the first world war, there probably weren't more than 1.5 billion people in the world with 500 million of them in the OECD who were younger than the average. By 2020 we will have 7 billion people in the world and about 1.2 billion in the OECD getting older with the average age over 21. The issue is that people over 60 consume half the health budget and also expect pensions. If you take the present value of public pension liabilities as a percentage of 1997 GNP in the main OECD countries, just the figures for paying existing statutory requirements of unfunded state pensions look dramatic. The UK has got it right, at about 5%. But in France the present value of liabilities as a percent of GNP is over 100%, closely followed by Germany and Japan. One of our scenarios is called Atlantic Storm, where a continuously devaluing euro creates a trade war between the US and Europe, with the collapse of NATO by 2010.

### The Impact of 'Unboxing'

From all of this you can see that there is a fairly strong potential collision beginning to build up, caused by the fact that a lot of people are getting squeezed out of a system which has its own engines of growth. The effect is to push people out. But we have no real mechanism for picking them up and helping them. Now we have put a lot of effort into thinking what regeneration would look like under these circumstances because if you don't get it right, a lot of discontent with political representation will build up. However, there are in-built, chronic sources of disaffection, while people themselves have become vastly more complex. They are much less biddable and have a much less deferential view of how one approaches leadership.

For instance, we used to be able to classify British people during the Second World War simple by knowing his or her age, social class at birth, gender and level of educational attainment. You need about 120 dimensions now to get the same sort of knowledge. What is happening is that individuals have become more complex: from having been boxed in by circumstances, they have now, as we say, become 'unboxed'. We don't sit in little lots anymore. People put on lots of different faces at different times, which has certain consequences.

This is different from the 'conveyor belt', which is that I am bom in a village, I go to a school and I get a job and I get married and then I get a house and then I get old and so on. It was the kind of conveyor belt that took people through life in a series of very straightforward templates and still, 80% of the population both here and in the US look for templates which describe the kind of person you are and they expect politicians to enunciate these templates. But it can't be done-it is an impossible task. Not least because if I did tell you what you should be you would hate it.

Now this 'unboxing' brings a freedom to rove, which implies a very high order navigation skills. Most of us here we have no problem with this: you can flick from one mode to another, you are in cocktail party mode and then you are dealing with a head teacher and then you are worried about dealing with whatever it may be. You can hop between these social domains. But if you come from template land it is very hard to do this.

And if you have lousy maps you are in trouble. It is worth saying two things. One that if you are going to make a decision it bases itself on two things. One is your cognitive map of what is going on. The second thing is data. But if you don't have either, you are in trouble. So people coming from difficult backgrounds, such as from tower blocks with three generations of unemployed, do not have a good map about how things work, and have no access to information as to how things are.

The third consequence of unboxing is the blurring of boundaries: for example, politics as fun, religion as a business. The level of blurring between categories is huge, which makes it very difficult for politicians. Fourth is the greatly increased capacity to evade tacit rules: the 'wriggle'. Our society is run by unexpressed, subtle rules of how we deal with each other. For example, say you are an environmentalist and you agree that we shouldn't be driving a big car. But on the other hand as a concerned parent you need the safety of a Volvo. So you can wriggle yourself out of any position or state and it is virtually impossible to pin people down politically.

The problem is that politicians have been dealing with great boxed options, such as economic policy variables and social policy variables. The strong homogeneity of boxed societies allowed businesses and political parties to build solid and differentialed positions. But as values have become more diverse, this ability is greatly weakened and further eroded by competition and consumerism. 'Unboxed' consumers are inclined to look to political parties, for example, to provide a 'product' that can uniquely match their needs. Politicians have to deal with the fact that the electorate has come unboxed and won't stay still. Furthermore, because 'unboxed' consumers can simultaneously fulfil many diverse roles, how they respond to a political commercial or social issue will probably no longer be fixed by their age, sex or occupation, but may vary greatly depending on their relationship to the particular issue.

It means that traditional bundling is ceasing to offer a coherent political position, and the emphasis is shifting to brand, to 'competence', and to personality. This is enhanced by the interaction with internal media dynamics.

### **Possible Futures**

Looking, then at the major drivers of change, how might things develop? From 1870 up till the present there has been consistent economic growth of 3%. Taking world gross product indexed at 1870, that would see world product nearly doubling by 2015, and nearly trebling by 2030.

Over the time frame spanning 1980 to 2030, we have seen and will see an exponential growth in science and technology, in connectivity, in the human resource base, in commercial activity and markets, the installed capital base and resource needs. We are already seeing the weakening of high wage, labour-intensive mass manufacture. Capital goods and systems of organisation are penetrating and supplanting many traditional roles, industrial patterns and social institutions. Across the 2000-2010 period, managing the marginal becomes more important politically, with a focus on re-skilling and reshaping of roles. By 2010 onwards demographics and dependency become dominating themes, as do social transformation and adaptation. There is already an end of deference to governors and a consumerist stance to governance. And increasingly, we will see a plethora of forms of representation with organisations like Greenpeace.

The capacity to organise around sources of knowledge will dominate the pursuit of sustainable profitability, while coping with complexity is increasingly a key challenge. By 2010, with the transnational spread of power and veto, we have to learn to live together. And there are some frightening issues to face, such as the ability to make weapons of mass destruction in a garage. Out towards the 2015, 2020 period the whole issue of the environment emerges-partly as source issues. There will be an oil crisis in the next three years, while the Gulf will run out of water in the next 10 years. We are using about a third of the biomass and half of the fresh water of the planet right now. So there are some very profound issues as to how we cope with this. And for the industrialised world: together, separate or separated? Do we find a common model or do we follow a series of different patterns, such as the European model, the Anglo-Saxon model etc? We shall see.

#### The Three Scenarios

In the first scenario, called Faster, Faster, the world is one of starkly accelerating change, in which competition and commoditisation are increasing and industrial transformation is rapid. The convergence of the industrialising nations upon the industrialised world is accelerated. Nations, as well as firms, can easily be ranked, as the criteria for success are more clearly understood. Markets become even more prone to amplifying success and penalising failure. Information technology serves as the conduit through which ever more complex work is 'posted' to global marketplaces, where low-wage areas play an ever-expanding role. Those with the lowest skills are the most penalised.

In Rough Neighbours, the world of Faster, Faster proves socially intolerable. Populist politics, seeking to allocate blame, take managerial eyes off the balances that need to be struck. Relations with the industrialising world are simultaneously closer in commercial terms and more distant in terms of politics. The primacy of the liberal democratic model of government is weakened and regional associations increasingly follow their own, often authoritarian paths. Moderate protectionism, based upon worthy alibis such as environmental concerns, stands in the way of international collaboration.

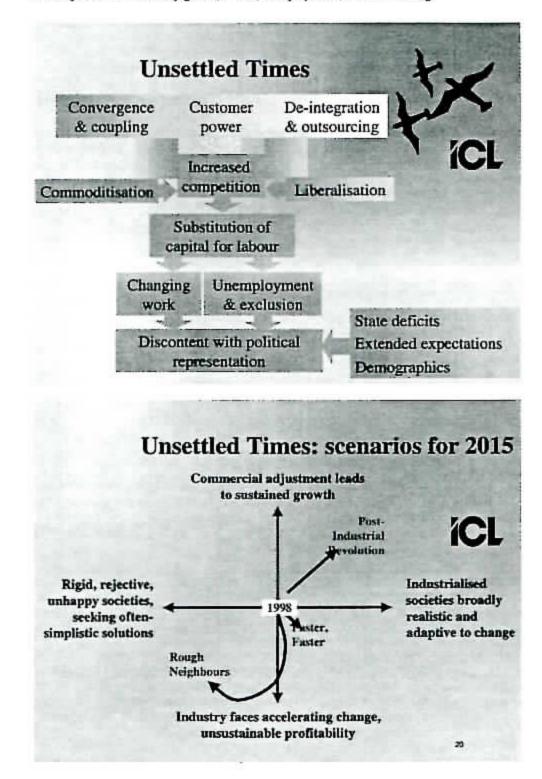
The result is a decade of modified strife, from which the industrialised world emerges fragmented and bruised, its former claims to global leadership compromised. Rough Neighbours have arrived on the scene. The industrialised world is confronted by an Asian economic region, revolving around Chinese predominance and answering to different value systems and imperatives from those with which the industrialised world feels familiar. Other, less predictable and often 'de-located' political associations have also formed. The low-income world is cross-hatched with competing ideologies. Many of these ideologies, carried by IT, generate support among the less capable in the industrialised world.

In Post-Industrial Revolution, owing to the huge advances in technology and the massive increase in market potential, firms have been able to retain and reinforce their sources of competitive advantage. Economic success creates the conditions for purposeful change. The exploitation of knowledge and potential is found to occur best in physically connected, specialist networks. It takes the complex societies of the industrialised world to create such centres of excellence. Nations nurture these sources of distinctive competence and innovation with appropriate local regulatory and institutional support.

The forces which dominate **Faster**, **Faster** remain potent, however. The need to coordinate a response to this dominates the concerns of government. Each nation in the industrialised world emphasises its distinctive competence, doing so within a common framework of knowledge-centred business.

#### Conclusion

Thus what we have been developing this year is the second invisible hand - the ability to oversee what is going on and manage a complex system, not just leave it to markets - though with an understanding how markets work. We believe that you can only address complex systems by understanding and manipulating them. This kind of governance is one of highly expert, competitive, aggressive nodes of expertise which need to be harmonised. I hope that doesn't sound like a dreadful future because it is the only one we can really go for, which, in my opinion, is worth having.



# EDUCATION AND LEISURE IN LONDON IN 2020:

Chris Yapp, ICL Fellow

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What I would like to do in the session to talk about learning and leisure and to give a personal view of the situation as I see that it could be and may well be for the masses. What I don't want to do coming from an IT company is talk to you about the top 5%, the leading edge and what will be the best learning and the best leisure available to London in the year 2020. What I want to talk about is the kind of changes that probably you need to make in order to make sure this is a prosperous city and a cohesive society. And to look at the way in which the extent to which to achieve competitiveness and improve social inclusion in London by 2020 we need to learn more.

My own journey to understanding that these two were intimately linked probably started with, ironically, with the Office of Science and Technology Foresight programme back in 1995 which actually formally linked and had a leisure and learning panel. It is rare for anybody from the IT industry to stand up and talk about a government department's foresight! But maybe by the year 2020 this will become commonplace and we won't even comment on it.

### Dramatic Impact of Technology

I think it is important for any speaker who wants to talk about the future to try and give a bit of their own values because your values may well disagree with mine on a number of points. You may well reject some of the thing I say- that is your liberty, you can't help being wrong! But what I want to do is to try to outline where I arn coming from in terms of the way that I try to look at the future and then you may be able to see where you think the flaws are. So I will try and be explicit about the world and what we will see changing. The first thing we will see is individual lifestyles changing quite dramatically and technology is one of the most fascinating areas of that, and is

occurring on a global scale. I mean we all know now about children and their use of Nintendos, Segas and Playstations, how adept they are and how their motor skills for some of these games are phenomenal.

But it is amazing to wander around Soweto and places without electricity where there are mobile phones. It is fascinating to read about the Chechen rebels, who are medieval bandits and yet they organise over the Internet. So what we have are some very, very interesting ways in which not just the next generation down is changing. If you go into a 'cybercafé in London what will you see? People under 25 on the Net? No, what you find is a lot of people like Russian emigrés emailing their family in far off places because it is a much more reliable mechanism than the telephone or post. What is interesting about these trends is that they are not generational-specific. We are seeing the world of work changing and this is going to be a phenomenal thing because I think it affects the whole structure of our society.

### Upheavals in Size and Scale

Since the oil shocks of the early 1970's the vast majority of new jobs are created in small to medium enterprises, in companies spun out of big ones. When ICL doubles in size we will probably only employ the same number of people or maybe less, but what we will cause is more employment among either our suppliers or customers. It is impossible now to manage the rate of change or discontinuity of change in our society with large organisations. Typical unit size of employment now is 200, which is about the size of many primary schools; and the only sector of the economy which seems to think that aggregation and economies of scale are important is education which wants to make bigger colleges and bigger universities when the rest of us in industry are saying these organisations are too big to handle.

My personal view of the year 2020 is that schools will have to drop in size to the size of industry and naturally small schools will be more viable than big ones and smaller universities will be more viable than bigger ones with economies of scope rather than scale. We will have to reinvent government too since the nation state will be too big to handle some problems at the local level, and too small to handle the big problems of the 21st century such as cloning or the environment. Just because technology makes things possible doesn't mean that you can do it within a single nation state. My own belief as you will see at the end of this is that actually we are going to see a reemergence of city states. Governments tax, as it were. In this new world that is going to be very, very hard, because where am I? I jointly wrote an article for an American magazine with a friend in Washington from my home in Hampshire. Did I export? When it received a paid-for copy did I import? Where was the intellectual property for tax purposes? So governments at the national level are going to find it hard to tax. The UK is unique in having a system where we tax nationally and local government is funded through central taxes. I think life will change and by 2020 we will see a reversion of that. I think that in particular the only thing that governments can tax any longer is where you live.

We are blurring the boundaries. You just don't know what organisations are any more, which is a change from when a shop was a shop. Organisational drift has occurred dramatically. Education is central to this. If I sit down with a nursery teacher or primary school teacher and talk about the world in 2020, the world that our children, our grandchildren will grow up in and work in and be a citizen in, no one has a clue what it is going to be like. The trouble is all of this is occurring inside one generation. It took 400 years before the printing press was democratised. The question is are we going to democratise the new machinery, the new technologies at the pace which enables everybody who could benefit to benefit? And therefore the story I want to want to unravel over the next 30 minutes or so is very much about what is the societal and economic potential of these new tools in creating a learning age.

### Fitting Education for the Future

Education has always been important but why now is it education, education, education, but not necessarily in that order? It is not just a British fascination. It is something on a global level. You know you can go from country to country and see the same concerns. We used to look at the German system of vocational education with awe compared with what we had here and it still is wonderful, but it isn't fit for the future. I want to say very clearly my own position: I have had great pleasure to have travelled to many countries and no country in the world now has an education system fit for the 21st century. You may disagree with everything I say but I want to make it very clear that my observation of the future of the world is that we cannot look to America to New Zealand, Australia and Malaysia or anywhere in the world and say we need to copy what's going on out there. We have to re-invent ourselves. Because we have moved from land to capital to knowledge as the basis or true competitive advantage. And the important thing I want to spell out in terms of personal philosophy is that machines are for doing and people for thinking.

By and large over the next 20 years we have to make the assumption that it can be done, it can be automated and it can be done, cheaper and more efficiently with machines than it can with people. And therefore the only sustainable long-term source of employment in the new economy of information technologies, are those things that rely on human creativity, innovation, design, flair and personal service. Much as some of my more technophile friends in the industry believe, we will not in my lifetime get around to being able to automate those things. But essentially the question is how many people are we going to empower through learning opportunities to be able to earn a living wage in the new economy through the exploitation of creativity.

### **New Lifestyle Patterns**

So I want to try to contrast the world in which my father grew up in, a world which I know, which most of the people in this audience with children and grandchildren know. My father grew up going to primary school, secondary school, then into the army, then into an apprenticeship to work to retirement. A linear model progressing through different stages of life. By the age of 13 he had all the skills he needed to see himself through to retirement at 70. He was the first generation to able to buy a house, to build a pension fund, through working 35 years, to raise three children. He had five days training after the age of 30, all of which were in his 50s on computers because he was a light engineer in Birmingham for a small engineering company and they supplied Rolls Royce and Rolls Royce insisted that all their suppliers had to use computers. So my dad after 20 odd years had to go to learn how to use computers to be able to be employable for the next few years.

But notice it isn't just about skills. Look at the structure of the housing market. If you took out a 25 year mortgage, that seems to me to be for people who are in employment now, to be more risky than for the self-employed, though that's not how we treat them. It seems to me that the assumption is that you have a job for life to build up a pension fund, and that doesn't seem to me to be realistic. What has happened since the late 60's and particularly since the oil shocks of the 1970's it that this linear model of progression where we educate the young, the middle lot work and then you give them a few years of retirement at the end of your life, changes to one that actually looks a bit more like this: you start an education, move into training, you are going to work and once you are in work you require to retrain more and more and more often just to stay employable. But also more people are finding that they are having to go back into education. Friends of mine who graduated in 1975 and went into the City lost their jobs some times during the 1980s, walked down the road, knocked on the door and got another job, with pretty much the same skill sets. Where does that occur now?

What we have is structural unemployment, where, once you leave the labour market, you end up in a situation where you can join the 'leisure economy', the black market or

whatever and you have to retrain to get back in and the big problem is it is much easier to get retraining if you are in work than if you are out. Access to learning opportunities becomes the real killer. So what we are seeing is life has become more episodic. Most of us now are in the situation where you are constantly trying to rejuggle doing the job, keeping your skills up to date, making sure that you have the skills for the next thing you are going to do and hopefully occasionally having the odd moment off. The leisure society as Charles Handy has described it has been postponed.

#### Virtuous and Vicious Circles

Back in the 1970's we were looking at technology, and what was going to happen by 1990 and for the great gurus and thinkers in the 1970's, we would all have lots and lots of leisure time at this stage, and the real worry was there was no such thing as work anymere. It hasn't worked like that. There is a virtuous circle and a vicious circle and the virtuous circle is that the only source of long-term competitive advantage is knowledge and I might say wisdom. You cannot have a knowledge economy if you don't have a learning society, and it isn't human unless you also have a leisure society because we all need friends, we are social animals. And the point is that the dynamic society that gets the knowledge economy and the leisure society together would actually be happy and content. The problem is that we have ended up with two worlds: those of us who work, working longer and longer hours year on year, and those who are out of work and unable to get access to skills to get back in, although Gordon Brown is trying to do something about that through the New Deal.

The problem is we have ended up dysfunctional, so since the 1970s what we have seen is that those who have the skills and those who have the flexibility can command anything they like and that increasingly rather than trickle down in terms of wealth, what we have is poor going upwards. Those of us who are included, in fact all of the new wealth that has been created, has tended to accumulate at the top and the bottom quartile in particular has either stayed static or gone down. The question is how long is it before we start to get womed about the fact that the barbarians don't like what we have and can we find a different balance that enables us not to have to walk from Waterloo to the Opera House and find people sleeping on the streets?

#### Learning on Demand

When you see other sectors of the economy that have gone from the linear model to the parallel model, such as manufacturing, they have also gone from supplier- to user-driven. We used to manufacture for stock, put it into the factory and then someone would sell it. When Just-in-Time came about, what they did was they built where there was an order and we flipped it around and started from what the user wanted and then start building. In 'quick response' in retail they replenish things on the basis of what gets sold. By 2020 we will have to move from a supply side-led economy in education. People say that schools are not factories and education is not a factory except that when I point out that what you do is you put the child on a conveyor belt at 4 and then you push them off at a certain stage and the ones that need the most help, are the ones you shove off first. Then eventually you begin to realise that maybe we have got this wrong and the problem is that in a world like mine where the half life of knowledge in the IT industry is probably now 18 months, so if you don't retrain time and time again- you probably need to refresh your skills ten times through your career just to stay employable. And it isn't just IT. In one area of the economy where the UK is world-class is in biotechnology and pharmaceuticals. It probably moves faster there now than it does in IT. The rate at which knowledge becomes obsolete is phenomenal. The idea that you educate the young and the rest work doesn't fit.

I believe we have to move to a situation where we need to provide learning on demand throughout life for everybody and I believe by 2020 London could be there; the UK could be there and I think we will be there, certainly if I have my way. And what

it means is personalising the curriculum for the individuals, their needs, their aspirations, their interests, their styles. If Toyota can build 16 million cars to spec around what an individual wants why can't we build a new individual curriculum for everybody? It is purely laziness on our part to believe it cannot be done. It means that quality is driven by the users not by the supply side. Accreditation of learning is more about accountability of public money than it is about actually improving the learning opportunities. It is more about getting some civil servants gongs for getting people into NVO's than it is about improving life opportunities for learning. We actually want quality to mean something, quality is what you say it is, not what I, the teacher says it is. This is a quality lecture if it interests you, not whether I think it is.

It also means we have to understand that learning is a social experience both for the teacher and the learner. And the important thing is that teamwork in learning is not cheating; tearnwork in teaching doesn't occur enough-it is too much of a broadcast model of standing up in front and teaching. I think the exams and the qualification system is not fit for the future. But above all one of the problems is, because we have seen these problems in education and training occurring, we have tended to create whole new armies of bureaucrats who send out forms for people to fill in to find out why things aren't improving. If you shot most of them so people could get on with teaching and learning rather than filling in forms you could probably improve things a lot faster. In some industries we used to have these people called progress chasers and the reason we used to employ 5% more progress chasers year on year was the progress chasers were stopping the progress they were there to make because there were so many of them around - which was why we needed more of them!

# The Long Trail of Under-Achievement

I am optimistic about the UK. I think English is now our most important asset by a long, long way and because of this we are a major player in the media. We are good at it: advertising, publishing, broadcasting, video, music, animation- you name it, in all the different media industries the UK has world class competence. The real issue for us, though, is that where we are good we are very, very good: the best of what we do, whether it is the nursery school, primary school, secondary, universities, colleges, workplace learning- is world class. I have seen in the last four years genuinely only three or four examples of practice which is better than anything I can find in the UK. This big problem we have is we are brilliant when we set our mind to it, but having sorted it out we then don't bother to diffuse that through the rest and the problem has been the long trail of under-achievement in British educational standards. We have a much broader range of achievements. That's why our engineers are good, that's why our creative people are in demand whether it's design, or whatever.

The thing is we tend to sometimes end up depressing the educators because we keep pointing the finger and telling them they are failing. The trouble is if you are look at our small to medium-size enterprises you find exactly the same pattern. Everywhere there are great British companies but we have this tail and tendency of under-achievers. I think we are a very creative nation, and London is certainly one of the creative capitals of the world. The real difficulty, I think, if we want to build a learning society, is to understand some very, very fundamental changes that are now going on everywhere. I said I cannot tell a nursery teacher what a child who is four now will need to have the skill base to be able to survive and thrive in the world in 2020, other than I know is it is very different from where we now are. But the thing is our current conception of literacy is only 100 - 150 years old. It was defined by the needs of the industrial economy. We ran an empire with a large literate population and we fail sometimes to appreciate the importance of visual literacy to build things like this building. Think about the way in which stained glass windows communicated culture and learning around communities. The oral tradition has been part of our own culture but somehow we seem to be believe that reading took over and the visual and oral traditions were no longer relevant.

Look at the quality of debates in Parliament now compared to 100 years ago. Do you genuinely believe we are in a more educated society than they were 100 years ago? I think what we are going to see is the reversion to the oral tradition. The big problem with globalisation and new technologies is that the minimum skill set required to eam a living wage is rising dramatically fast but because of the UK business tendency to be brilliant and under achievers at the same time, unless we do something about it we will find that a greater proportion of our society will not be able to eam a living wage in the new economy. And therefore those of us who currently feel like the elite or included may well decide that actually it is worthwhile keeping the hand up and actually trying to get more involved. So I don't spend more and more of my income on actually protecting myself with security devices to stop them getting in.

### Learn to Love Learning

You can not be taught all the things you need to know and you certainly cannot know by the age of 16, 18 or 21 all things you will need to be able to handle the changes. So we need children to leave school, college or university with a greater love of learning as an adult than they had as a five year old going in. We are very far away from that situation. We need to educate and create a love of learning and the ability to best manage the development of a love of learning throughout life. But the fun thing about this is that we are seeing two cultures —the artist types and the scientist types-beginning to see that break. One of the key things about the technologies in my industry now is that we are beginning to work with people in film, television, music and broadcasting. What we are seeing now is the need for renaissance characters of broader education rather than stovepipe specialism. You are scientific, you are artistic, you go into the church: we have tended to pigeonhole people and just assume. Yet a lot of the sort of things that we are now talking requires a much broader range of skills and a better educated person rather than a better trained person and that is why it is fundamentally about these changes.

I am going to talk a little bit about technology. On the 17th June 1948 at 10.02 AM in Manchester the first modern computer was switched on. We have now had 50 years and a few months experience of using computers and the most fundamental things we have learned in that time we go on ignoring time and time again. The trouble is we do not have a learning society. There is no evidence that IT improves organisational efficiency. What it does do is change the scope and capacity for effectiveness; it is about doing things differently not doing things better. But if you are talking about effectiveness, you are talking about organisational change, you are talking about new roles, new models, new ways of governing, new ways of managing, new ways of leading and then and only then should you think about how you use technology. You cannot do what you always did and just use computers to do what you always did. Ten years ago, the word re-engineering was invented at MIT and what it meant before consultants took it over and got it wrong was about doing things differently through IT: using the capacity of IT to reinvent new ways of doing it, not about cutting costs.

So my challenge in life, my aspiration is that I want to be re-engineer education to support lifelong learning and by 2020 I hope to be able to look back in life, and to be able to say by then we have re-engineered education to support learning. If you are going to do that you have to ask what is the purpose of education and training in our society. I think it falls into three things: it is about personal growth, it is also about social cohesion-giving a sense of community, a sense of identity, a sense of different communities being able to bridge to each other- and it is also about economic performance. If you don't have the skills and the competence over broad enough numbers, you can't get the economic performance to invest back into personal growth.

### Life Skills for 2020

In 1994 I did a cost of quality model on the British economy. I came to the conclusion that we spend £20 billion a year on personal growth and we actually picked up social costs of failure of about £10 – 15 billion. Society picks up the costs of failure-we do

not seem to be prepared to invest to try and tackle some of that. I am not saying that we can get rid of all of it by any stretch of the imagination- there are wicked people around- but by and large we seem prepared to tolerate failure, we do not seem to be prepared for society to go for the reduction of failure so we can invest in doing things properly. I used to think about 2020 that actually one of the killer things is that lifelong learning is a concept that is now being taken over by the whole concept of skills for employability. Why? There is more to life than work. I think there are three dimensions to lifelong learning: lifelong learning skills for economic man, woman, life-wide learning skills such as citizenship, family and the community and life-deep learning as a bridge to be able link together nationalities and cultures and we will have to have by 2020 a much richer definition of learning to underpin our society. In Northern Ireland what is needed is life-deeper, and life long learning: learning for peace and co-operation. But the costs and benefits in investing in each of these three are very, very different, with very different pay back times.

How would I know that the year 2020 we could re-engineer education in London. Well let's imagine that we are walking down a street in London, what would we want to observe and the answer is not lots of computers with learning things on them, or digital televisions or anything else. I think we need a culture of lifelong learning. Too clever by half? Those that can do and those who can't teach? A politician who listens to a reasoned argument and changes his mind is not called a learner but weak on principle and incapable of leadership. A complete waste of time is described as an academic exercise. All of these are evidence the UK does not have a culture of lifelong learning. It also means that we have to have access to lifelong learning on a socially inclusive basis. It is about the content to support the individual lifelong learner, whether they are naught or ninety or maybe 150 by 2020.

Above all, learning is social and socialising experience. PCs won't be substitutes for teachers, although some of my colleagues in the industry might not agree. The thing is we have to create a context for learning; we learn best from our friends and colleagues. That is what I would look for in the London in 2020- to say we have done it. Re-engineer what? We have to re-engineer the infrastructure of education, we have to re-engineer the curriculum and we have to re-engineer the teachers themselves. I told this to a conference of the National Association of Head Teachers yesterday and I got a standing ovation for that remark. If we are going to transform learning by then we have to ask what are the capabilities we need to invest in? And what do we do differently tomorrow to make this happen? The trouble is what we have is a policy of doing lots of first steps and pilots in the absence of vision. When it looks dangerously as if it might work you switch the funding off just in case it tackles the current power base.

My belief is that we will blur the boundary between school, the home, the library the community centre, the job centre providers, the community centre, and the workplace and that the model for learning in the 21st century- it will be constrained for a long while by the buildings and structures we have- but that actually what we will see is the learning city. Why do you have to go to school as a child and college as an adult? We already have children doing foundation courses at the Open University over the Internet while doing A levels in their school. And so I think the community learning network is the model we are going to see driving through this. If you want to learn in a library or job centre or a WI building or anywhere else in the community or even at home, that's up to you. We will deliver learning where you want it. We talk a lot at the moment about the public and the private sector and partnership. I think we missed something: you cannot understand real communities if you don't understand the voluntary sector, if you don't understand the importance of the voluntary sector in tackling social exclusion and social cohesion. And I think we are going to have to see a reinvention of community around a better balance than we currently have, because by and large the voluntary sector's attitude to the private sector is give us some money and go away- it is not really a partnership.

### The Learning Grid

Certainly our own experience of technology in communities is that the voluntary sector is more powerful an agent of change than we would dared to imagine. The reason it is important is that at the end of the day it is not about technology. The way in which society ultimately controls and gets some sense of destiny, is through social innovation not technological revolution. If you look back at the industrial society, some things were invented as government policy like the public libraries, some things were opposed to government policy like trade unions and some things were independent such as the mutuals. So what you can see is that social innovation here become the driver of social, economic and technological change. The problem, as four and half years ago a colleague and I came to the conclusion, is that if you want to build a community learning network model you couldn't do it all bottom up. The trouble was it exacerbates the tensions between those that have and have not. My colleague was a designer on National Grid just over the road from here, and he and I sat down on a wet Thursday and coined the idea of a national grid and said- how would I engineer cost-out so I could do lifelong learning on demand to everybody in the same way that we now get running water or electricity?

And we looked at the idea of a top- down policy framework whereby you could separate out what went into the schools, the colleges, the different types of computer networks and the different educational learning power station, if you like. And we went to the then government and the opposition who have since swapped places with the idea that this was the policy framework, the means for the National Grid for learning to an end which I believe is the learning city or the learning community. And the promise we made to the politicians is that they could do this in the course of a single parliament- that's quite interesting and challenging, and they believed us! But consider this: by 2002 all schools and colleges will be on the Internet, we will have a university for industry launched in the Dome in March 2000, the Government is now starting pilot projects putting money to work out how every library can become community access points, BBC and Channel Four are doing fascinating Innovative work, world class work I might say. And the agencies of Government are now trying to stop drowning in paperwork and allow you to talk to them through the Internet.

My dream is to by 2020 every adult will carry a Visa card, a credit card, a passport for lifelong learning. It would be a smart card. But in a way that my parents opened a building society account when I was born and my grandparents could put some money in so that eventually they actually gave me my deposit on my first home: every child when they are born should open an individual learning account and the contributions that the parents or grandparents make is to give them that opportunity to fund their own lifelong learning throughout their life and that will become the entry. In case you think this is far-fetched: more adults carry a library card than a credit card. I turn that into a smart card and start putting money in there and maybe this is the new mutual. Maybe the Learning Bank is the new mutual, the new friendly society, the new credit union: is that the agent who actually creates social inclusion and learning?

#### Re-engineering Learning

I have said already that the real fun thing is that the skill set for 2020 has to be a lot higher now just to earn a living wage so I am going to hang myself and tell you what I think the minimum skill set you will need to be able to be an employable citizen: an employed adult who is a citizen of an open, tolerant democracy in the year 2020. It has to be more languages: I know for the British than means two! But you cannot build a global society if you don't have cultural sensitivity. Media awareness not a soft option: in terms of employment it is a massive growth sector, certainly in London, but in a democracy we need to know when a Bill Gates or Murdoch is pulling the wool over your eyes. Science and technology- awareness of conflicts is important not least because of the environment and the ethics of cloning. Teamworking is a key skill for life, as are creativity, and innovation and learning skills.

Unless that is all part of learning, unless our schools actually create that culture of learning, there will not be adults capable of learning and, living their lives successful in the new world. And the underlying skills set is this: remember the phrase that education is what is left when you have forgotten what they taught you at school? The trouble is we accredit the wrong things, we don't accredit human competencies, we accredit subject disciplines. By 2020 we will have scrapped A levels, GCSE, NVO's. I certainly think the whole exam system is holding us back- it is a constraint on good teaching and the learning society.

What study the English language in the university and not study the human brain? We have made huge breakthroughs in understanding different types of intelligence, learning styles, emotional intelligence, how the brain works, but it isn't taught to teachers. We teach teaching and learning as if the human brain was not involved in this process. The research does not affect the practice: this is a sign of failure. We will re-engineer the teaching profession. I have written a paper on it which is going on to the learning technologies Web site for the Demos project on learning. My argument is that I want to see six teachers per pupil which means that by 2020 we will value the teacher in our society as a lifelong learner. Teaching will be seen as a key profession, and learning will be a social experience. In the personalised or individualised curriculum we will focus on social inclusion, constantly seeking to remove the barriers and manage the paradox the global city, the globalisation of the economy and the localisation and the richness of the ethnic, and cultural language diversity of London. And that's what London 2020 will be like.

The trouble is that there are people like me who work 20 hours a day 6 days a week, who don't have enough time for their partner and children and friends. What we have to do I think to make life more fun, more enjoyable, a bit more relaxed and less stressful is that technology will become less intrusive- you won't even notice it around. The voluntary sector will grow. My parallel model of life is that children that leave school at 12 but not need formal education until 21, but they start to work from the voluntary sector. And at the other end, when people enter the Third Age of life, why work to 65 or 60 or wherever we end up and then stop and get a pension? Why not can't healthy people, at 75, 77 or 80 work two days- more and more people I know are working that way, it is happening anyway. So the idea of education, work, and retirement changes. Kids mature early, so why can't they learn and leave school at 12 and work on community projects with Third Age volunteers to actually rebuild the communities in which they leave. This would enrich our society in phenomenal ways.

### Towards a New Golden Age

We will end up with new 'digerati': digital literates. The Third Age, not youth, will drive that society in terms of policies. The wealthiest part of the population has for my entire career been four years older than me. In the MORI survey we published recently, more men than women now want to work from home and the reason is we don't like traffic congestion. I think the balance will shift to travelling less to work and more towards tourism. More travel in London as a percentage will be about travel, tourism, enjoyment, leisure, learning than it will be about going into work. It means we have to find a family friendly approach to work around community based models and again I think that would link to this, I think it will link to the third age, to new models. We will also have to find ways to give people time to take a break from the frenetic pace of work and the work sabbatical for everybody as much as for the few privileged.

I think between now and the year 2020 what we are in is the new Golden Age, the New Renaissance. We are building a more modular economy, we are blurring the boundaries, we are in a period of risk and uncertainty, we are creating new opportunities all over the place. But we have to believe this is: people first, technology second. If we do that-some of you may think that I am a dreamer-but I am not the only one. Consider this: I am 45, my parents are 71 and 69. I have not lost a parent, sibling or child through disease or war. I am virtually the oldest person in human history who can stand up and tell you that. This is the Golden Age for those of us

privileged to have access.. My challenge to everybody is that we should deepen and broaden this across the whole of society and that the tools my industry is involved in creating enables us to be much more free about what kind of society we want to build.

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# TECHNOLOGY, GLOBALISATION AND THE CITY OF FINANCE:

Richard O'Brien, Global Business Network Europe

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### Introduction: Global London

It is difficult to think of a place of business that is more global than the City of London. It is globally connected, it speaks a global language and it is almost as loyal to the world as to its own country, and is located in a country which prides itself on its own identity and its desire to be globally connected.

In many respects it has always been so: the City has been a trading place, the connector of economies, for centuries. It may be located in the urban conglomeration which is the capital of the country which once dared to try to rule much of the world yet it has a history of distancing itself from that other capital down the river and from the country itself.

It has a brand name as a city which is perhaps the greatest city name in the world, admired for its history, its buildings, its culture.

Will we write these words as credibly or as easily in 2020? To answer, let us think what may change.

#### **Possible Changes**

First, as monetary and financial activities are able to take place in more and more locations, so that "geography matters less than before", so business can be transacted in London that previously was transacted in other places. The reverse flow could see business move to other places. As the world becomes more connected this should be beneficial to all places that themselves are well connected and the more places that are involved, so activities in each place ought to be able to rise. For example, as more financial centres develop across Europe, so this should create more activity for all those centres, as the network becomes the locus of activity. All the City has to do is to stay a credible and substantial part of that network: the market will increase. For these reasons I have always felt, and suggested, that the debate as to the location of the new European Central Bank was largely irrelevant in an increasingly integrated financial world, as business and trading thrives on a growing network and as more financial centres emerge, not just thinking that business would gravitate towards one centre....and if anything many market players might even prefer to be further from the authorities!

Secondly, we may see a change in the status of London itself: possibly being just one of the many important cities in an increasingly federal Europe, or the capital of a more isolated country outside the more united Europe, or the pre-eminent city of Europe. This process itself will be driven not just by the changing status of nations (and thereby affecting the status of their capitals) but also by the changing political power of cities.

As one group of scenario building European economists suggested in a session with me recently, the European heads of government summits may be sidelined by the more important summits of the leading mayors of Europe (the C7 not the G7). The future is one of cities not just nations: new nations and regions may cluster around cities and compete to be the region of the city not the other historical process of cities competing to be the centres of regions and nations.

Thirdly, computer technology may enable the whole world to converse in English much more easily, so that more and more cities have effectively high skills in the global language: under such circumstances, London could either profit by still being the best, a step ahead of the rest, or finding that its once great pre-eminence was fading.

Fourthly, by 2020 the City of London could be facing the shock of ice covering the English Channel in the winter and later more permanently as the unusual British climate, warmed by the currents, became more like that of Moscow or the Canadian tundra, at somewhat similar latitudes. Ice ages have often arrived in a matter of a couple of decades, and there are signs that a mini ice age could be on its way, at least as cold as those in the 16th century or worse. Dealers skating on the Thames would make a colourful sight in their bright trading parkas.

Let us imagine a vigorous City in 2020: on what might that vigour be built, whether the air is warm or chilly? It will have met the challenges of the new demands in the world of finance. Two of these seem to be sure: first, the demand to re-engineer the financing of the public sectors of European nations as fiscal policies change under the Euro; and secondly, designing, funding and trading the plethora of new private financial products which are only just beginning to be seen. We are at a point where private citizens are being called upon to take care of their own savings and investments as the state pulls out of a whole range of services. In the short term we will see a revolution in the financing of welfare in the arenas of health and education. whatever the colour of the party ruling down the river in Westminster (or in Edinburgh, Cardiff, Belfast or in Manchester). Welfare systems across Europe will be harmonising or clashing. Tax systems and spending programmes will be subjects of hot debate and competition. The wholesale market world of the City (never much of a retail place in culture) will have to finance all these new products, or someone else will. Its advantage in Europe is that this revolution is further advanced in the UK so there is time to practice and to lead.

These comments suggest one possible shift of emphasis for the City for the period to 2020: meeting the challenges of a uniting, or fighting, European economy. This is less of a global ambition but for a while the agenda will be driven by the great European experiment. To some degree we may see the strategic option being a choice between making sure of the European home before conquering the world. For if Europe is won, then the time zone battle is won in the global jigsaw.

For time zones are still one of the great factors at play. However we see the advance of 24 hour trading and global portfolios rocking around the world, somehow the time zone is still something we have to take into serious consideration. Humans still like to sleep awhile and even medical advances suggest we will still like our sleep. So a world market with at least 3 time zones is handy and useful. Being the locus of the European time zone is still a big prize.

#### **Towards Different Futures**

Let me now move on to a little different structure to my remarks. Addressing uncertainty can be usefully done through the device of scenario building. I have been developing scenarios for the future of money in various ways for a decade now and a recent version of such scenarios may be read in the latest edition of the new EIU report on Strategic Finance.

For this exercise I'd like you to think of four scenarios developed around two axes: the axis of technology and an axis related to the idea of globalisation. Of course the future is not two dimensional but this will suffice for our purpose.

The technology axis we can envisage as being between two extremes, one where there is a rapid advance of the development and use of technology (relevant to the future of finance) and where it is slow or even retarded (e.g. by a general push back against the use of technology, or by breakdowns).

The globalisation axis we might envisage as ranging between a future where the world is extremely well integrated on a global basis and the other where we have reverted to extreme fragmentation, devolution without integration (note that devolution is a quite natural corollary of globalisation but in this instance we envisage devolution without integration).

With these two axes and their extreme polarities we now have four possible futures to consider, first we have a globalised future with fast technological change and usage, which may seem the most obviously futuristic world. Let us call this "Globetech", for want of a more original name. Secondly we have the world of fast technological change but fragmented, under the name of "Fragtech". Thirdly, a world of slow or reversionary technological change but still a globalised world, hereby christened "Slowglobe". Fourthly, a fragmented, divided world of slow technology, which for the want of anything remotely catchy I shall refer to simply as "The Fourth World".

For technophiles fast technological growth, especially in the arena of communications, might not seem to be a natural partner to the idea of fragmentation and a non-global world. Nor might technophiles see globalisation as an easy concept if we do not have fast technological growth. So two of these futures might seem unrealistic, which if abandoned would leave us just with Globetech and The Fourth World.

But the more broadminded technophile will understand that technology divides as well as unites: technology could be the means for fragmentation, for erecting technological barriers, a world of impenetrable passwords, heavy encryption, or even just so much technology that poor citizens like me just go local in frustration at the sheer effort to get on-line and stay up with the curve. So fast use of technology could sit with a fragmented, divided and far from global, integrated world, in Fraglech.

As for the possibility of having globalisation without new technology, that may be a stretch if communications technology is not advancing: to a great extent the progress of globalisation, as we generally understand it, does get driven by big advances in communications, itself driven by various forms of technology, whether we talk of computers, satellites, transatlantic cables, or even the printing press. Generally I have found the idea of advances happening without technology now one which makes people think hard, especially if they are in the IT world.

But let us not worry about extensive scenario construction at this level, let us see if we can envisage different futures for the City of London in such different worlds and think about the implications.

Let us start with the futuristic world of fast technology and an integrated world, Globetech. At one level this should be a future where the City of London, as a financial centre, should thrive: the City would want to ensure it is one of the three key time zone centres, unless technology finally fixes the time zone division in which case this will be a very competitive place. The City would need to be highly skilled in technology, well connected, having a regulatory structure that allows for privacy as well as easy access and transmission of appropriate data. We may well see truly global firms that have no particular loyalty to any one jurisdiction. In this world the idea that the stock exchange should focus on being the place for all stocks to trade rather than ensuring it is the place for UK stocks to have their home may come finally to

pass. London will be renamed, again, as the GlobalExchange (if someone hasn't got there first, like Globex). The advantage of the English language may be even greater as every market will be connected, but equally we may be the only place that can no longer put up a protective language barrier around ourselves: we will not have our own private language (perhaps we will see a revival of the old British languages, Gaelic, Celtic, Welsh as a result as the only way to have a more private conversation!). However it emerges, this is likely to be an extremely tough world for the City given the size of the world markets and everyone having lots of access. Yet the City should feel confident it has a good chance of being competitive.

What about the City in the opposite, Fourth, World, the circumstance of slow technology and fragmentation? Let us suppose that slow tech means a lack of trust in technology so there are barriers against effective datamining, products are not being sold on-line, and all efforts to digitise markets have hit so many costly failures that disillusion in the tech world has set in. I won't even suggest the Year 2000 problem is the cause but it could be an early indicator or a trigger.

In this world the City will have to consider how much local business it can generate, how it may live without so much global activity going through its firms, how many jobs there may be when the globalising firms of the late 20th century go back home and abandon the attempt to run their European operations from one place, or when they set up shop in lots of local places. A Britain shut out of a failing, fragmenting Europe could be one ingredient. This may see the failure of Canary Wharf Two so perhaps there could be smiles in the Square Mile. Perhaps the Bank of England would be still running an independent monetary policy, running the primary currency of Europe or helping others to run their own policy as national European central banks sought to find an exit from Euroland.

This would be a world where plans for new technology would be on hold and perhaps, just like the search for retired COBOL experts today there would be a call for those who knew how to fix Applemacs.

The other two futures may be the most challenging when trying to imagine the implications. In the fragmented, non-global fast technology world you may need expertise in data-protection and the ability to have excellent technological firewalls, as the world sought to divide and protect itself. You may also need to have a lot of market segments so you could trade many currencies and stocks in small markets in London, or negotiate access to other local markets or laboriously communicate with other markets (not laboriously in a technical sense but through the regulatory barriers). For if anything were to drive us to fragmentation it is probably regulation and this exercise could be just as easily done envisaging a highly regulated world as being a world of fragmentation (though regulation may also be the price we pay for globalisation in the end).

And in the world of slow tech but globalisation you may find the cost of business has risen as there is the need to communicate and trade globally but the technology just hasn't taken off. Imagination that has been conjured up about the wonderful capabilities of technology has just has run ahead of the practicalities even though we are in a globally integrated competitive world. You will need all kinds of latter-day back-up systems. You will be using faxes, telexes, email, the post and travelling a great deal perhaps. It could mean an influx of foreign firms to the City, if the City remains a global centre, as it will be even more critical to be located in the major centres. Canary Wharf stage Four will be rising in the East. I'm not suggesting you go long of quill pens and frock coats but don't throw away all that out-of-date hardware just yet.

These are only sketchy futures with sketchy implications. Scenarios have to be built around specific issues to achieve the right focus. The point is, in 2020 the City could be living in some very different futures, the progress towards globalisation and towards technological change can come at different speeds. It will be a bumpy ride along both

axes. Globalisation is a journey, a process that gets more complex the more cultures and practices and political systems are thrown together. Technology may even get more complex the more we have. At times there will be passages of revisionism, periods of doubt, and of careful review. There will be more big accidents and mistakes. The worst accidents may come simply because too few of us can keep up with the pace of change. Expect to see the word responsibility, due diligence, checks and balances coming up in the world of finance more and more.

Perhaps I should not leave the discussion of globalisation at that, given the mounting concern of late after the decline of Asian economies and stock market falls. Globalisation has been having a bit of a bad press. In one sense this is fine, globalisation had been bandled around as an excuse for all kinds of things, including the opening up of economies when they might not have been ready or able to cope with the full implications. However just because a number of immature economies are unable to cope it does not mean that they should not try. And those who are in the business of money should be able to recognise the difference between emerging, immature economies and financial systems and those that are more robust and able to cope with two way flows of money. Rigidity in a system is a great weakness, as Japan is finding out today. Openness in Japan over the years would have been a great help. Could globalisation reverse? The biggest worry I have is that somehow there is an attempt to use exchange controls to fix things, which if anything echoes the mistakes the thirties in terms of policies that would be it. A period of review might be useful but not reversal. We could go down the fragmentation route and Europe could lead the way if its integration experiment fails.

The balance on our axis may be decided in the world of politics and security issues with economics making the process easy or hard. To quote lan Clark: "Precisely how the balance between globalisation and fragmentation will be adjusted depends on the new role that states are able to forge for themselves, and how successfully they manage to mediate between increasingly potent international pressures (or forces of globalisation) and the heightened levels of domestic discontent (or forces of fragmentation)." For the City of London, how the UK plays in this game may be crucial.

#### Wrap-up: Geography Helps and Globalisation Lives

If I had to make a prediction, something scenarists try to avoid in isolation, I would think we can guarantee that London will be still a major financial centre for a long time to come. Its features are hard to match. Of course centres can be destroyed given enough trouble: look at the extreme example of Beirut. In the years since I lirst glibly wrote of "the end of geography" in the world of finance I have learnt more about the power of geography, even though the thesis is still pretty robust. If geography didn't matter then I wouldn't be living still in London. As they say, location, location and location are the three key words in property investment: it may be true for a long time in the world of money and be one of the great strengths of London, in a unique location, with as good a set of connections as anyone (pace a complete clogging up of the airways around Heathrow, not impossible), with the best slot in the time zones, able to talk to everyone at some time in a more convenient way than elsewhere. Good brokers should be in the middle. London is in the middle of everywhere. Location, location, location.

Let me conclude with a little homily about time. It is relatively easy to think about all kinds of futures and the combinations are almost limitless. You have to make some choices. The hardest perhaps is to gauge just when things may happen. As they say also in the world of money, timing is everything. And things comes round and repeat themselves. To conclude let me cite a short passage from something I read last week:

"All these issues are becoming of even greater interest in the more sombre years as a more questioning approach to globalisation is being expressed. After the boom finance days of the past decade, when going global was all the rage, some observers forecast a return to domestic bases and less enthusiasm for global firms and services. Meanwhile in the economics field the ambitious integration process in Europe is reaching its most testing period, and the natural enthusiasms unleashed in Eastern Europe in 1989 are being partly dampened by the enormity of the reform task. The past decade saw a major sea-change towards liberalisation and deregulation, 'allowing the market to decide'. The fallout from that period is encouraging a reassessment of that approach."

Sounds like a recent text from any one paper of today. I was rather surprised to read it in my own little book, published seven years ago. Don't write off globalisation: we are just beginning to understand it.

Timing is everything.

Richard O'Brien's book, "The End of Geography", analyses the developments of networking across national boundaries and scopes their effects. He is head of the Global Business Network in the UK. Previously he was Chief Economist of American Express.

# 2020: THE END OF THE PROFESSIONS; OR A NEW BEGINNING?

Dr Richard Susskind, FRSE, Strathclyde University

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What I would like to do today is to challenge many of our assumptions about what it is to be a professional and indeed what professional service is. Let me start with a couple of favourite quotes of mine about the past. In 1943 it was said: 'I think there is a world market for maybe five computers'. These were the words of Thomas Watson, at the time chairman of IBM. In 1949, it was written - 'Computers in the future may weigh no more than 1½ tons' – in the publication, Popular Mechanics, forecasting the relentless march of technology. In 1965, it was anticipated that 'Machines will be capable within 20 years of doing any work that a man can do' - by Herbert Simon, a Nobel prize winner some time later. An in 1977, perhaps my all-time favourite: 'There is no reason anyone would want a computer in their home'- Ken Olsen, president, chairman and founder of Digital Equipment Corporation.

All of this is really to say that when we are trying to anticipate the future it is a high risk business and many serious players have got it wrong. This is of relevance to me because I specialise in trying to predict the future. That said, there is some sense of comfort to be gained from the fact that in ten years' time if you're wrong you can just shrug your shoulders - it can't be immediately falsified at this stage! But I think there is a strong history of getting it wrong, and what I'd like to say later on is just a little about the nature of predicting the future and how one can go about doing that in a more or less responsible way.

#### Holes, not Drills

Let me start where I like to start all presentations, and that is the tale - possibly apocryphal – about one of the world's leading manufacturers of power tools. It is said they take their new executives on a course, they sit them in a room much like this, although I suspect not so grand, and they use technology much as you see before you. They put up the first slide - of a gleaming power drill and they say to the assembled executives: 'This is what we sell - isn't it?' The new executives look rather hesitatingly around one another, and collectively they buck up the courage and say: 'Yes, of course that is what we sell.' The trainers, with considerable satisfaction, press one key on the computer, up comes an image of a hole in a wall, and say Wrong, this is what we sell, because this is what our customers want. It is your job as new executives to find ever more competitive and imaginative ways of giving customers what they want: which is the hole in the wall.'

I think there is a tremendous lesson there for the professions. For those of us who think that looking ahead is simply about looking at what we do today and making things a bit better, cheaper, quicker, I think there is a radical challenge here. Because in information technology, as I'll argue shortly, we can see a quite different way of changing our given professions and activities. And that is to focus on what it is that our market wants. And I want to ask you later what it is that professional service clients are actually after. What's their hole in the wall? And might it be that there are entirely different ways of delivering professional service? I'm going to argue that there will be.

#### Innovation is Not Just Automation

But first of all I'd like to introduce three quite different distinctions. The first distinction is between automation and innovation, and that is possibly the most important distinction in the world of information technology. Automation is what many of us think about when we think of technology. It is about computerising and systematising what already goes on today. So we have a given task, process or activity, you bring technology to bear, and it make things quicker or cheaper or better. It is about streamlining and optimising what already happens; not changing it.

Innovation is about change through technology - quite different uses of technology, where the use of technology brings a fundamental shift in whatever is being subject to technology. Let me give you an example. Perhaps the best known and most successful information technology in our world today is cash dispensing machines (ATMs). This is fantastic technology, and has revolutionised domestic banking. What did that automate? Was it the case that 30 years ago in the middle of the night if you needed money that you went down to a hole in the wall at the local bank, you knelt down and there was a wee chap sitting there handing out money? It wasn't that someone said: "These people are getting a bit cold and it is inefficient, why don't we computerise it?". It was technology that gave rise to the possibility of an entirely new way of delivering a domestic banking service. And so too I argue in the professions. Don't just focus on automating what already happens today. Use the power of technology fundamentally to change the way that service is delivered and organisations are structured.

#### Walk Forward not Backward into the Future

So that is the first distinction: between automation and innovation. The second distinction I want to draw is between two ways of looking at the future. One I call legacy-based and the other I see as vision-based. Legacy-based thinking is in many ways being conditioned in one's thinking about the future by where you are today. It is like that old story of the person who gets lost in the countryside and goes up to a farmer and asks how to get to a particular town. This causes a sharp intake of breath

and the response: "I wouldn't start from here". And that is what most people feel like with technology: "I wouldn't like to start from here. We are in the wrong place". Within most organisations there are legacy systems: the result of past investment that actually seems to position people wrongly for the future because technology changes so quickly.

Vision-based thinking is quite different. With vision-based thinking you say: forget where we are today for a while. Where would we like to be in ten years' time? Let's not be hampered or restricted by what we have today. Let's just think where we would like to be. And if we can have a vision that is attractive enough, maybe we can manage things to achieve that vision. If you don't allow yourself to do vision-based thinking you'll never get beyond your legacy. To paraphrase Charles Handy, who is one of my favourite writers, puts it: "You're staggering backwards into the future". That is what you do when you're legacy-based. So I'm thinking, in the context of this discussion, that we certainly have to be focusing on innovation rather than automation and on being vision-based rather than legacy-based.

# Pre-empting the Problems Rather than Solving Them

The third distinction I'd like to draw is between – and this is in professional service – reactive professional service and proactive professional service. Reactive professional service is what really goes on today. By and large, professionals sit at their desks waiting for their clients to come to them, to outline their requirements, and the professionals react to these. Many of the examples I'll give are from law because that is where I originally worked and thought through my ideas, but I'm told by those who've read my work from other professions that the ideas are generalisable. With the lawyer, for instance, when the client comes in and says they've got a problem, a very common response is: 'Why didn't you come to me three weeks earlier?' That is an unhelpful response (for a whole bundle of reasons) because most clients will say. "Well, I didn't know I had a problem then'. There is a paradox in professional service generally. You need to know quite a lot about the subject to know when you need a professional adviser. In fact it seems often you need to be a lawyer to know if you need a lawyer or when you need a lawyer. What most clients say is "We need you to be more proactive as professional advisers and try and anticipate our needs in advance". And I think there are all sorts of ways one can look at this.

In law, for example, whereas much law is devoted to dispute resolution, what clients are saying is they want dispute pre-emption or dispute avoidance. It is not that they want a dispute resolved more speedily or quickly or better, full stop. Ideally people wouldn't like to have a dispute at all. People would prefer to be involved with risk management rather than problem solving. And that is true right across the professions. I sometimes put it this way: what would you prefer: a fence at the top of the cliff or an ambulance at the bottom? Most clients will opt for the fence at the top of the cliff, where the ambulance is going that bit faster, it is getting there quicker and less bumpy and so forth. But we should get right up at the top of the cliff and think how can we actually deliver professional input in a way that will avoid difficulties for clients, in a way that will pre-empt problems, a way that will help people manage the risks.

And I think that here is one of the huge challenges for information technology, because my own quite strong belief is that it is very difficult to be a good proactive professional adviser in the current way that the professions are organised, which, by and large, requires that clients receive one-to-one advice and they pay professionals by the hour. And this, no matter what anyone says to you, remains the dominant mindset of professional advisers when they are undertaking their work. And if you are charging by the hour, this seems to discourage the use of professionals until the very last moment. 'Oh, I don't want to spend the money on them quite yet' is the feeling, and I've got lots of sympathy with that. So this is a big challenge: how can we inject professional insight, experience and track record earlier in the lifecycle of clients'

affairs, without charging by the hour through traditional reactive service? That is a main question for us today.

#### Signposts of Change

But what I'd like to do before exploring this theme directly is to claim that when we are sketching out the role of professionals in the future, we are in fact projecting professional service into a different world. This is one of the points that I really try to impress on government again and again.

When you're looking ten years ahead and you're trying to think of a certain institution or organisation or facility, you have to project into a very different society. There is no point in thinking of the future in terms of a court system and of a society that we have just now. In ten years' time we'll be in a very different society, and I honestly believe – and this may sound bizarre – that the next decade is going to be the most fundamental decade of change for centuries. There will be a transformation of society through technologies, and in particular Internet technologies, and I want to talk to you a bit about that.

But let me answer an objection that many people have to the very idea of looking ahead ten years, or twenty years, as we are trying to do today. Is there any point in this at all? You could imagine, for example, that had I been standing here in, say, 1978 trying to look twenty years ahead I would have not been able to anticipate the personal computer, and would not have been able to anticipate the World-Wide Web. These are two phenomenal developments in our world that have transformed many countries, even transformed entire economies.

And people often say to me: 'Well what is it that you're missing for the next twenty years?' and of course I've got no sense of what I'm missing! But there is something quite different happening just now. If you take what we have today, and I'm mainly meaning Internet technologies, and you just follow through with no major changes in technology at all, if you just follow through the technologies we have today to their logical conclusions, we can see a move into a quite different society. So, frankly, even without major step changes that we can't anticipate today, the world is going to be very different - just based on what we have today. So I'm saying we've got enough to be getting on with.

Often when people say you can't predict the future that is an excuse for not thinking about it at all, and I'm saying what you need to do is think through the implications of what we have before us. Apart from that you can, in about ten laboratories around the world, go and see the future. The best in this country is probably the British Telecom laboratories in Martlesham. In these labs you can actually see the kind of technologies that are likely to be around in seven or eight years' time from now. There are all sorts of trends that we can be quite comfortable about. We don't know the as-yet uninvented big step changes, we don't know the huge discoveries yet to happen, but by goodness there is so much already happening, we've got to get our heads around that now.

Let me give you a flavour of what I think about the Internet. Let me just ask you, how many people here use Internet electronic mail? That is interesting: more hands go up almost by the week as I give presentations. Indeed I give a lecture every year to the new undergraduates in Strathclyde University Law School - they're all a bit younger in Scotland than England, they're all about 17. It is interesting because they're all coming in thinking that law is going to be as it was when their parents or uncles or aunts studied it, and so forth. And the first question I always ask them is: "how many of you use electronic mail?" Three years ago there were blank faces. They barely knew what it meant; two years ago some hands went up; last year everyone raised their hands. And it has changed like that. And that is a generational shift. It is quite astounding.

Now - the World-Wide Web. How many people admit to surfing the web? As I always say, if you don't understand the question, you probably don't do it. But yes, there are quite a few people, and again that is interesting.

### The Impact of the Internet

I think the Internet is really about three new ways of doing things. Of course it is essentially a world network by which most people, or 100 million people, are connected to one another. But it enables three things to happen. First, there is electronic mail. Every person who's on the Internet can send and receive messages and documents and computer files from one another, so you're all communicating on the Internet. The 1980s was the decade of personal computing, while the 1990s has been the decade of interpersonal computing. If you're connected to this network called the Internet you're all on the one system. That is electronic mail.

Secondly – and I'm not particularly into this personally but it is a thing that lots of people get excited about – are what I call on-line communities. Here, people around the world who share an interest in a particular topic can all get together on the Internet and, whether it be 1964 steering wheels of Rover cars or whatever it is that people get excited about, they can all come together and communicate on-line. And actually people have social lives on-line. Although this sounds bizarre if you read, for instance, a book called Virtual Communities by Howard Reingold (a very influential book). He says at the beginning that he used to be one of these people who looked at people who spent lots of time on-line socialising and thought they were bizarre and antisocial. And he said he wanted to write a book about this to try and explain this phenomenon because he just thought it was so strange. It transpires he is now one of these guys who goes online two or three hours a night, and he offers amazingly sophisticated explanations of why it is a good thing. So that is the second application, on-line communities.

The third is for me the most important, which is the World Wide Web, which is the biggest publishing project this world has ever undertaken. You have at your fingertips if you're on the World Wide Web the richest body of information there is — it is inconceivable how much there is out there on every imaginable topic and more. You can just log on and go to sites or search for sites on any imaginable topic. And this is what we've got today.

Looking ahead at the Internet, here are a few things that are likely to happen, in my view.

#### **Access Gets Easier**

One early development is that television and Internet are going to converge. This will be a vital development. In this country about a third of homes in the country already have personal computers. In the United States and other countries like Norway, for example, they have the most at about 40%. But most people think it is going to level out there.

There was a view a couple of years ago that the way you look at the Internet, at the World Wide Web, had to be through a PC. You go to the Internet via a personal computer. That dominated thinking up until perhaps only about a year ago. Now we are thinking about two other means of access: one, personal communication devices whether it be phones or hand held computers, these are also going to be a route in. And secondly, most importantly, digital television is going to be our window on the World Wide Web. And that is going to come into every home in the country. Just about every home in this country has a television facility, and into that will be piped in the Web. I don't know if it will be in two years, three years or even five years; but certainly within twenty years, everyone will have that facility at their fingertips.

Look at the current text-based systems which, as it were, hand behind today's TVs. I think these are rather counter-intuitive and flat and dull, certainly text-based and not very intuitive. However, this is already accessed 18 million times a week in this country. Imagine in the future when from your television you have a fully functional interactive multimedia, gloriously friendly, sophisticated service coming at you. 18 million accesses will look minor in comparison. This will become be a dominant way for us to gain access to information and guidance, and I'll build on that in a second.

Secondly, with huge improvements in bandwidth - a crude simplification here - but if you imagine what we've been doing in the past, (and I use the analogy with water and pipes), has been a bit like water dripping through a drinking straw, we are now becoming able to blast it through mains pipes. All the problems we have today of using the World Wide Web - of speed and responsiveness - these are all going to dissolve. Within twenty years, I think we will be able to transfer unlimited amounts of information instantaneously at negligible cost for each transaction. So, I think all the problems with performance will gradually dissolve.

At the same time, we will all be talking to our machines. When I talk about sitting in front of your television using the World Wide Web I'm not talking about having a keyboard on your lap. Already the little "doofer" things that you use for your volume and channel changing, they're already being adapted to allow you to work the World-Wide Web. We'll be speaking to our televisions soon. We'll say 'option 3' and so forth. People are already speaking to their televisions but with less justification today! In the future we'll be doing it as a matter of course and politely too.

#### Electronic Government

We must also take seriously the upsurge in public sector usage. This is amazing. The Prime Minister has said in this country that by the year 2002 25% of government service will be deliverable electronically. That is 25%, a quarter. And the Internet will be one of the dominant means of delivery. So we are moving into a world where instead of going to post offices or actually going to public buildings, we'll actually be transacting with the state electronically. This is where it actually hits home: people who are looking for jobs or who are working out their housing entitlement or their welfare benefits and so forth, the services they need will all be mediated through television, or the next generation of televisions, which will include World-Wide Web access. It will be wonderfully easy to use; it won't be the counter-intuitive systems we are all used to.

I mentioned windows on the World Wide Web: just the other day there was an article about a project I'd been involved in with in The Times which was looking ahead to the courtroom of the future. Below this piece was an article by a company that has developed a prototype for surfing the Internet on your microwave door. The idea is we spend a lot of time standing in front of a microwave. Wouldn't it be useful if you could just log on while you're there? Whether or not you buy that idea, we can be confident that access points (so-called "information appliances") will be everywhere. And with 25% of public services deliverable electronically within three years, and by 2020 almost all of them, I would hope every strategic venture by the government from now until then will have a strong electronic dimension to it. So this is a different world. We are not just fiddling at the edges here; we are changing the whole basis of how our society operates, how we interact with the state and how we communicate with one another.

### Cutting Out the Middleman

"Disintermediation" is a horrible word but denotes a vital concept. In the future, disintermediation will be the order of the day. Let me give an example. If you want to go on a holiday, you may have had the same experience as me. You go down to the travel agent. I've got three children and I'll say 'Well I've got three children, we want to

travel for a couple of hours, here's how much our budget is. What have you got?'. And often what happens is that they bring out a pile of brochures because they don't, unless they're really good travel agents, actually know themselves. So there we are together, with a brochure, and you all thumb through it together. This is a really bizarre state of affairs. Think of it in information terms: I want information, that is information about holidays. Out there are lots of holiday providers who've got information to give; they want people to know about their facilities. And in the middle we have someone who is not adding value. There are brochures and there are people and they are not making the connections for us.

What you actually want, surely, and indeed Microsoft is providing this, is just to log onto the Internet and sill out a form online - here's how many kids I've got, here's how much I want to spend, here's how far I want to travel, and here's the weather and so forth, and up will come a range of choices. So far that is automation. It is not really changing the process. But think about this: you can click a button if you want to see the view from your room. Or perhaps you'd like an architectural walk-through the building, or you could interview the chef, if is he on duty just now. There are all manner of other things we can do with this.

So with the process of disintermediation, you have someone who wants to provide information and someone who wants access to information, but we get rid of the person in the middle. I don't have anything against travel agents, but we get rid of that element in the middle, we disintermediate the broker, the intermediary, the agent, the middle-man. They're history unless they're really adding value. And what we put in the middle is some far slimmer information system that takes us to only the information we need, because many human agents unfortunately don't do that today. 95% of car salesmen in the United States reckon they're going to be disintermediated by the Intermet. It's the same phenomenon.

### The Web Becomes the First Port of Call

17 million simultaneous telephone calls can be passed down one thin line of fibre today. How you can do that I've no idea! It is almost beyond imagination. By carpeting a world in fibre, we are connecting everyone to everyone else, we are going to be talking to our machines, the Internet is going to be in every home via the World Wide Web through television, and public sector interaction is going to be dominated by technology.

The World Wide Web, I argue as my main theme, is going to become our first port of call in life. Whenever we want information or entertainment on any particular or conceivable topic, that is where we'll go. And whether it be our on-line shopping or banking or booking a restaurant, it will just become a part of our lives in a very non-forbidding way. And it is in that context that I always ask professionals this question: can professional life ever be the same? Is it sustainable to think that in a world where we are all connected to one another in the way I've just mentioned, that professional people alone will hang on to one-to-one consultative, over- the-desk advisory service delivered on an hourly billing basis? Is that the only way of offering access to professional insight and guidance and information? I argue not.

And my main theme of course is that professional guidance, expertise and experience will be available on the Internet, on the World-Wide Web, alongside all sorts of other kinds of information. And, in fact, it is happening already. And I always say that to the sceptics. An interesting thing is this: when I wrote my book on this in respect of lawbut two years ago -people thought I was crazy when I said all of this about disintermediation of professional service. Two of the top three firms in London are now providing on-line services in the way I projected. And that has happened in just two years. And a whole host of other professionals are planning on doing similarly. Our world is changing rapidly. While many professional advisers want to ignore or deny the developments, I think in some sense much of this is inevitable.

#### The New Dimensions of Professional Services

I think professional service in the future is going to be of three sorts. The first will be the high value, complex, socially significant work that goes on today. I don't believe this will be changed fundamentally through technology. And this is a really basic point I put to all professional people. I'm not saying that the Internet's going to replace all the professional people in this room. I really am not saying that. For reasons that are quite sophisticated both in practice and theory, the high value, complex, socially significant work (I think) will be streamlined, optimised, improved and rendered more efficient and less costly through technology. It will be automated but not fundamentally changed.

There are two other dimensions though. The second dimension is what is going to happen to routine and repetitive work. Well, routine and repetitive work, I predict, is going to go through two phases – and they're described by two not-very-nice words. The first is systematisation, and the second is commoditisation. There is lots of work the professionals do, if we are hands-on-hearts honest with one another, that is "crank the handle" stuff. It is not fundamentally complicated, and it can and should be systematised and proceduralised and simplified. I've no doubt about that. Let me give you an example from law: debt collection. In the early '70s, if you were pursuing a debt, you used to go to a lawyer and they would address each debt in isolation, as highly individual matters; and they would write out the letters at the right time, pursue court processes and so forth as appropriate.

In the late '70s, many big companies who were sending many, many debt actions to their law firms said: "Hang on a second, surely you can do it more systematically than this. Can this not be systematised?" Sure enough, in the '80s, debt collection packages came out. Debt collection packages are systems which have embodied within them procedures and routines and standard documents and timetables for the pursuit of a whole host of debt collection actions. And what happens now is that a paralegal, a person with some legal insight but not a qualified lawyer, can be the operator of the system, with a very light hand on the tiller by a partner of the law firm in charge. The most profitable areas of legal business in this country in many firms are these debt collection systems. So it has been systematised. And large bulk recoveries are done through these systems.

The next phase is interesting - commoditisation. The natural next question for clients is: "Wait a further second, if you've not got a lawyer using this system, you've got a paralegal, and we are all connected to one another by the Internet, why can't I connect to this system directly?" And I think that is what's going to happen. A lot of these services that are routine and repetitive will become on-line services that are used directly by the clients themselves across the Internet. And that is a classic example, if we are honest with ourselves, of disintermediation. Now if you have a look at two recent consultation papers, public sector papers, both in England and Scotland on the topic of conveyancing, those of you who are not lawyers will always have thought - surely this could be done cheaper and more quickly. These papers express what I'm saying just now fairly explicitly. They talk about online land registration and so forth. The routine repetitive work is being systematised and in due course will then be commoditised. So this isn't fiction, it is already happening, and goodness knows how much more will happen in twenty years' time.

### The Latent Professional Market

Just to recap on the first two of the three elements of tomorrow's professional service high value, complex, socially significant professional work not be fundamentally changed through technology but will be streamlined and optimised; whereas routine and repetitive work of today will be commoditised after being systematised. The third dimension is far more exciting! And, frankly, it is the area of greatest social significance as well. It is what I call the latent professional market. And my argument is this. I say that there are innumerable situations in their working and domestic lives when people need professional guidance in a wide range of activities - whether it be accounting or audit or legal or medical or architectural - a wide range of areas where people really would benefit from professional insight. But to get it today is frequently just too complicated or too expensive or too forbidding. It doesn't happen. In law it is called unmet legal need, and there is far more of that out there than access to justice. And this is true in almost every profession. We've got a really strange thing in society: we actually have superb professionals and lots of people who don't benefit from them. That is a grave social ill in my view. That is not to say that the professions don't thrive. They do. But they thrive on a very small percentage of people and their activities.

So, what I'm saying is that with this latent professional market there surely comes many opportunities to provide professional help on-line. And this latent professional market will be realised through technology so that many more people have far more access to professional guidance. I'm now going to give a flavour of what this is going to be like, this type guidance. And remember that whereas before I was talking about existing practice (I'm saying the high-end stuff will be automated and the routine work will be systematised), this latent market, in contrast, is a new thing. This is meeting a need that is today unmet and that is a vital point.

Let me give you an example. A few years ago my wife crashed her car. It was quite a complicated accident, it wasn't a serious accident, but quite complicated, I thought, from a legal point of view. I phoned up my brother, a solicitor who advises road traffic law among other things, and I said to him: 'Alan, this is very complicated' and he said: 'It is not really'. I said, 'Well, tell me, what do I do?'. And I'll tell you what he didn't say – he didn't say "I'll send you down some legislation or some interesting cases to read'. Nor did he say "I'll send you a long letter in three weeks' time'. He said 'Richard, there are only four things you need to do here. Remember to tell your insurers this ... '. And then he rattled off three or four other points.

He gave me – and lawyers really don't like it when I say this, but he gave me the kind of guidance that a professional will give their friends and their family but not their clients. And this is a vital point, because I think there is a generic sort of guidance that lots of professionals would offer over the dinner table or at breakfast, guidance pitched at a level for friends and family but not for their clients. There is actually quite good legal and professional reasons that the world is this way, but what I want to say to you is the flavour of the guidance that will be available on-line will be like this informal friendly help. It will be informal, practical, jargon-free, punchy, it will be useful guidance that makes a difference today.

Now, let me be absolutely clear about something, and I'm often misquoted on this. I'm not saying that this advice will be better than that given by an expert. It really won't be. But I am saying that it is a lot better than nothing at all, which is what most people get today. I suspect that for 19 cases out of 20 that informal guidance helps people, there will be one time that online guidance will get it wrong. For me, in utilitarian terms, this is really not a difficulty. We have to find some way of identifying, of sharing out, the community's collective professional insight in a way that motivates those who are the providers and yet meets the social needs of our society who surely should benefit from the collective experience. And it is not just in law, it is right across the professions. I believe that all of this can be delivered through the Internet.

To sum up. You'll remember that I'm saying that high value work isn't really going to change that much, so the big firms might seem to be quite safe in a way. Well, I have other arguments, which suggest why they're not that safe, but these are not for today. Recall too that a lot of today's routine and repetitive work will be commoditised. Finally, I am suggesting that there is a huge latent professional market, which will be realised to deliver – online - practical punchy jargon-free usable guidance that will really make a difference. And, personally, I find that terribly attractive.

### Getting Good Advice Easily and Early

I can give all sorts of different examples of how this would work out, but I wanted to meet one objection that many of you may have in mind - and this is an objection that I think is most forcefully put to me by those people who work in family law. Often when I give a talk lawyers come up to me afterwards and say: 'Marvellous talk; really enjoyed it; great; you're absolutely right; our profession's really in for a shock; in fact I think it affects every area of law other than mine'. And then they offer these immense rationalisations of why it doesn't actually impinge on their own particular function. The most forceful and I think convincing arguments come from family lawyers and particularly divorce lawyers, who often say to me: 'You've got it wrong, in fact, because we are not really professional advisers' - which I think is funny because I thought they were. But they say, What we are actually doing quite often is counselling. My clients come to me not only because I know the law but they need someone completely independent, an impartial shoulder to dry on, someone who's got no axe to grind, who can give me some independent guidance in what's a terribly stressful time'. Indeed, one lawyer said to me that one of the vital tools to have on her desk is a box of Kleenex tissues because people get so upset. And that is all vital, I don't doubt that for a second, but they then start pointing at me and they say: 'And no system you'll develop can ever do that'. And I say 'I agree, but let me offer this suggestion'.

One of the commonest experiences of divorce lawyers, unfortunately, and this is tragic, is in relation to women who want to get divorced because of physical abuse. Women come along to their lawyers after suffering years of physical abuse, which has been unthinkable. And lawyers will often say, 'How on earth did you stay with this guy? How could you take that for so long?' And the reaction very commonly is, "I felt I couldn't leave. I'm not the breadwinner in the house. I don't earn any money so I thought I wouldn't have any money. The house isn't in my name so I thought I wouldn't be entitled to any home. I thought I'd lose custody of the children because I don't earn any money and I'm not a house owner.' All of which are misconceptions. Here is an example of a latent legal market for earlier legal input. This is my whole point about proactivity: it is the fence at the top of the cliff rather than the ambulance at the bottom earlier input into people's affairs so they actually would know when to consult their lawyers. Of course everyone who wants a divorce, in my view, should eventually take professional advice, but most people take it too late. Wouldn't it be better if, from your television at £5 a shot, if you could just log on and find out basic information? Ten points to remember when you're getting divorced or when you're buying a house, or whatever it is. So I'm saying there is a latent legal market not to replace advice, and not for new advice but actually to allow people earlier insight in ways that are simply not happening today.

Now people say to me: 'Do you really want to be interacting with machines rather than human beings?' Let me give you a couple of answers to that. On the one hand the travel agency one is quite an interesting one. Although I like my local travel agent, frankly booking a holiday is for me something I just want to get over with. If I'm socialising I'll socialise with my friends rather than my travel agents, unless they happen to be my friend. So I don't find any intrinsic social value in going to the travel agent. And nor do I actually think – correct me if I'm wrong here - but people don't go to the lawyers and accountants because they're nice people and they really like chatting with them. That is not why you pay, in the City of London, £375 an hour. Well, maybe some people do, but it is not why I would want to pay that kind of money. People go because they want knowledge or insight or expertise that these people have. And so I think we've got to be careful here. I wouldn't miss that form of social interaction.

The on-line community business worries me more, because it actually does seem to me that that is genuinely a substitute for fruitful social dialogue, and I wonder about the drawbacks and the benefits of that. But I'm quite confident that there is another

argument in all of this anyway, because it is all to do with the latent market. I'm not saying this is a substitute for social interaction. I'm saying this is something entirely new; that people actually are missing out on guidance and input from professionals and here's a new way of getting it. So it is not saying it is better than or less social than going to see a professional adviser. I am saying it is not happening anyway, so surely it is better if it happens in a way that is more often than not going to give rise to the person being in a better position. So that is the basic argument.

### Taking a View of Professionals

I've got a quote here which I want to get absolutely right. There are two views of professionals. The first one is what I call the trust model. And in the trust model I think there are several elements. We put trust in professionals, because of who they are. There is quite a lot wrapped up in all of that: when you have the confidence there is a professional body underpinning their, that they're qualified, that they have experience and so forth. Because of who they are there is an element of trust already. They're experts with competence, experience, track record and, to some extent, state-of-the-art knowledge. I call them the benevolent custodian. Because what you actually have, whether it be in science or law or whatever area, some knowledge that people want access to. But the only way they can get it today is through the intermedianes who happen to be the professional advisers. Now in the trust model these professional advisers are the benevolent custodians; they're looking after that knowledge and in a competent professional way they're bestowing that knowledge upon those who are prepared to pay for it.

Then there is the George Bernard Shaw model, and this is the quote: 'All professions are conspiracies against the laity', which is just one of these great quotes. 'All professions are conspiracies against the laity'. And that is not the benevolent custodian; rather, it is the jealous guard. And there is a strong element of this, and we all fear it. And you fear it of other professions, not your own so much. You think - why are they using all that jargon? Can't they speak like proper people? It is quite funny because I'm dual qualified so I'm half a lawyer and half a technologist, and I see everyone at it. Lawyers use Latin, and IT people use all manner of technical expressions. But in fact, again, there is a benign and a malevolent interpretation. On the one hand the benign interpretation is that it is honest shorthand. When I use the word "contract" in law, which isn't a particularly technical term, but it does mean a whole bundle of things, or if I use a Latin tag in speaking to another lawyer, I don't need to spell it out. The nasty view is that jargon is used simply to confuse.

Similarly in technology, we use shorthand. Shorthand is not very friendly, though, to someone who doesn't understand shorthand, and so one has to be very careful. So there are two different models: the trust model and there is the George Bernard Shaw model. The interesting thing when you think of either of them is that the disintermediation of professions applies to both, because there is the same basic information structure. People want information or guidance, there is a body of knowledge or experience, and just now there is a structure, which offers access to that. The structure is largely human, and I'm saying in large part there is going to be disintermediation of lawyers and injection of information systems which will offer lar greater access to professional guidance. I think what you're paying for goes right back to my anecdote about the hole in the wall. Why is it you go to the law firm? Is it for socialising with the person? Is it for the experience? What is the hole in the wall anyway? I think lawyers when they're looking ahead - and it is so true of many other professions - they really do think that their task is to hone to perfection the current way of delivering service. And I keep on saying to litigators: "Hold on! Clients don't want to have disputes. Remember the fence at the top of the cliff rather than an ambulance at the bottom. Clients want problem avoidance rather than problem resolution".

## The End or the Beginning?

There is a huge challenge here for professionals. And my own strategy, when I'm advising organisations or governments on how to think of technology, is to think of two things - of innovation and about the hole in the wall. What is it you're there to provide in service terms and market terms, and how can technology in innovative and imaginative ways help support that particular aim? You've got to think backwards from where you want to be — be vision-based.

So is it the end of the professions? When you think of the new world I've painted, a world where you have this phenomenal phenomenon called the Internet, we've never seen anything like it before. It is going to change our lives fundamentally. We are in a transitional period just now between a print-based industrial society and an IT-based information society. And life will never be the same again. The Internet will be in all our homes, it will be changing the way we interact with one another, the way we gain access to information, to service, to guidance and so forth. So does this entail the end of the professions? I think if you view the professions exclusively as a body of people who offer only guidance and expertise and advice on a one-to-one consultative advisory basis, billing by the hour, we will by 2020 substantially see the end of the professions. I feel that very strongly.

But if you envisage alternatively that the Internet will enable far greater access than was ever imaginable before, far greater access to the superb collective experience and insight that our professionals have in this and other communities, then we can actually have online guidance helping people in ways that were not imaginable in the past. We will be really affecting and supporting people's very existence. And if you can see the professions redefining themselves as information providers, as people who embody their knowledge and experience and insight and track record into these information systems, then you are seeing the professions at an entirely new beginning.

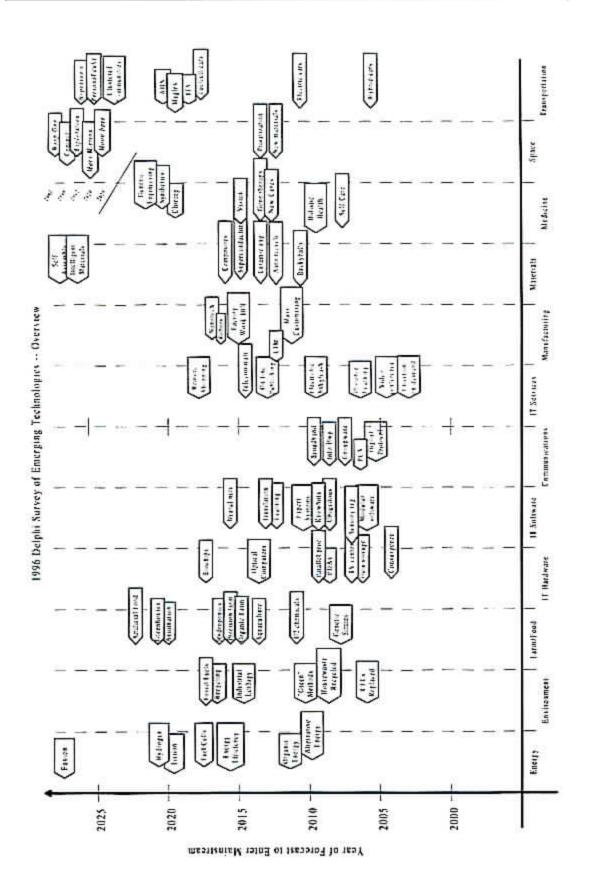
Professor Richard Susskind, FRSE, of Strathclyde University is a member of the Court of the Worshipful Company, and author of a recent book on "The Future of Law".

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# TECHNOLOGY MAP



## **LONDON DEMOGRAPHICS**

## Household projections: London

London								Thousands	
LIGHTON .	1981	1991	1992	1993	1996	2001	2006	2011	2016
Household types:									
Married Couple	1,438	1,258	1,246	1,236	1.203	1,162	1,129	1,101	1,071
Cohabiting couple	112	200	205	211	222	232	241	248	249
Lone parent	113	191	198	206	225	248	263	270	270
Other multi-person	262	303	313	320	339	368	400	437	469
One person	710	890	911	934	998	1,100	1.204	1.312	1,411
All households	2.635	2,842	2,872	2,906	2,986	3,109	3,237	3,368	3,471
Private hhold population	6,689	6,790	6,804	6,832	6,909	7,069	7,213	7,308	7,307
Average hhold size	2.54	2.39	2.37	2.35	2.31	2.27	2.23	2.17	2.11
Concealed couples	20	18	17	17	15	14	13	13	13
Concealed fone parents	11	11	- 11	11	10	9	8	8	8

Source: Regional Trends 23, 1997

## Resident population1: by ethnic group2, 1995/963

	Ethnic Minoray occulation						SERVICIONE IN	
	Percentage in each group			Total	White	Total	Ethnic Minority copulation as a percent-	
	Black	Indian	Pakistan/ Banglades	Mixed! other	(=100%) (Thousands)	population (Thousands)	population (Thousands)	age of total Population
Greet Britain	27	27	23	24	3.300	59,927	56.242	6
North East	-		33	43	19	2,560	2,580	21
North West (GOR) & Merseyside	12	26	40	22	279	6,547	6,827	4
Northwest (GOR)	11	28	43	18	255	5,157	5,414	5
Mersevsido	-	-		65	24	1,389	1,413	2
Yorkshire and the Humber	13	18	53	16	250	4,730	4,980	5
East Midlands	16	58	В	19	200	3,892	4,092	
West Midlands	17	39	33	12	415	4,836	5,253	
Eastern	27	21	24	28	158	5,051	5,209	- 3
London	38	22	15	24	1,558	5,340	6,908	23
South East (GORI)	19	29	17	35	235	7,454	7,690	3
South West	27	18	13	41	77	4,670	4,747	- 2
England	27	27	23	23	3.192	45,079	48,286	7
Wales	14	15	26	45	42	2,846	2,888	1
Scotland	**	14	40	39	66	5,002	5,068	1

Population in private households, students in halls of residence and those in NHS accommodation.

Source: Labour Force Survey, Office for National Statistics

<sup>2.</sup> For some attnic origins in some regions, sample sizes are too small to provide a reliable estimate.

<sup>3.</sup> Four quarter average Autumn 1995 to Summer 1996.

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