

Towards A New Normal



by David Fellows [\[1\]](#)

Things are not going back to normal. Things were changing anyway and they have now been given a good push. There has also been an enormous economic and fiscal shock arising from C-19 that adds a terrible seriousness to the situation. We must now look towards a new normal not try to reinvent the past. So how should Government help shape that future?

The inevitability of change

Digital communication has changed the options quite radically but old practices die hard. Even so, working at home had gradually become widespread at least for several days a week. The move to home-office has accelerated with C-19 but the advantages of this change will remain, including cost savings for businesses and households and an improved quality of life for the family.

C-19 has now put retail banking staff at home able to access secure information to deal directly with customers. Video conferencing also offers face to face meetings with colleagues and business partners with added opportunities for fitting in the odd Pilates session on Zoom. Some firms have already banned long journeys as a normal practice going forward, saving time and expense.

When social distancing is no longer necessary the demand for office space could diminish. Inevitably the hospitality industry in city centres will contract with fewer office workers. Long distance passenger travel operators could take quite a blow from a reduction in business travel and less commuting could hit urban transport operators. Travel infrastructure strategy will need revisiting.

Online shopping was already hitting the high street and out of town shopping malls. It is time to repurpose retail space into homes and improve the quality of local cafes and restaurants to secure potential new custom.

There will be a tendency for families to drift away from central areas, possibly far away, leaving those that remain with lower cost housing, more choice and a better life.

New attitudes

Complex international supply chains are now seen as risk-prone and dangerous to national security in times of crisis. There is a growing concern about China's role as de facto supplier of cheap garments and technology as a consequence of the

state's behaviour towards its own people and its predatory intentions towards other nations. The EU seems likely to prove aggressive if the UK does not accede to demands that would equate to Brexit in name only, a position repeatedly rejected by Parliament and decisively voted against at the last general election. For the present, a greater degree of national self-sufficiency seems to offer some safeguards in a diversely problematic situation and it would help answer growing concerns about the scale of the balance of payments deficit in such uncertain times.

Apart from these considerations, people are asking why more things cannot be produced in the UK. They can appreciate that prices may increase but they are concerned about an economy becoming too specialised in City and hospitality trades. They see a sizable population with diverse talents and inclinations but a narrowing range of employment options for the next generation. It is often said that the pandemic has made people more concerned for others, so what are our plans for improved inclusivity? In past decades when youth unemployment spiked, the answer came in the form of youth training schemes that, in practice, offered limited training and little opportunity. The tokenism of this approach was not lost on the youths in question and must not be repeated.

We are global traders. The UK is the largest net exporter of world class financial services. A reverse flow of goods must be embraced and allows for global trade efficiencies. We need this system. I suggest, however, that for social, economic and security reasons the imbalance in traded goods has gone too far. It has become an issue of serious neglect.

Opportunities for goods and services

There are potential avenues that could help ensure the diversification of employment and repatriation of some trade in goods lost overseas. For instance, manufacturing offers a range of distinctly different skill requirements from those found amongst the service industries. The sector has suffered serious decline but the UK still has many manufacturing sites throughout the country some of them operating at highly advanced levels; there are still major engineering departments in UK universities and skill training in local colleges; the green agenda leads to a whole series of new industries; computer aided design expertise offers support for improvements in the efficiency of manufacturing processes to offset the potentially higher costs of repatriated production. Similar arguments could be made for the relevance and development of domestic agriculture.

Even in the services field there are new opportunities. Digital technology appeals to large numbers of the younger generation and start-ups abound. The deficiency here is in the availability of experiential and financial support to help them to move to the next level.

Levelling-up potential

The Government's *levelling-up* agenda for the regions is highly relevant to a shared national response to the C-19 crisis and Brexit. It could provide the serious economic resurgence in the regions that has been lacking for decades, it could offer a programme of inclusivity in deprived areas.

This could involve the relocation of Government administration, expansion of regional businesses, business relocations and the creation of new businesses. The Government has many options to facilitate this including: the use of public sector procurement; the creation of enterprise zones, free ports and regional investment institutions; deregulation; and the effective mobilisation of potentially supportive institutions including universities, colleges and multi-agency business advice services. Targeted incentives could be offered for the deployment of new technology and skill development. Government has recognised the need for transport and broadband infrastructure improvements. These must be prioritised against the options for business support.

John Mills argues, most recently in *The Road to Recovery* [\[2\]](#), that the pound sterling should be pegged at approximately 20% below its current level to encourage capital investment, subject to a more amenable banking sector, to facilitate competitive pricing for UK manufactures.

This potentially radical levelling-up agenda with all its facets could serve the current economic and social imperatives as outlined. It could provide a programme primarily directed at the regions but with numerous spill-over advantaged from its components that it would provide consequential benefits for London and surrounding areas in the South East. Indeed, the opportunity could be taken to define London's primary national role as distinct from the regions, enabling its emergence as a more liveable environment.

Messaging

The C-19 crisis has seen the Government explain itself

directly to the public through nightly news conferences. Although not always fully realised, these broadcasts required Government to develop an outline plan, prioritise its actions and make staged advances. At every step it needed to maintain engage the public through briefings pitched at the right level to minimise subsequent revision.

This daunting task became harder as opponents in the media, politics and other institutions worked tirelessly to undermine the success of the project by disrupting public confidence, offering advice that could never be executed, or using hindsight to condemn decisions that were accepted as good practice when they were originally taken.

The experience of this tragedy offers numerous lessons for public messaging of the recovery programme. Consistency from all voices, confronting false perceptions offered by others and timing the release of detail with certainty of follow-through are clearly important. In terms of the platforms chosen, the Government could decide to present its proposals and report progress in a programme of video recordings and public appearances around the country. Whatever its choices it must assume that in seeking to win public confidence and support it is on its own.

Conclusion

We are not a country that looks for economic planning on a grand scale, neither do we tend to celebrate entrepreneurialism, perhaps being diffident towards its often obsessive traits. Even so, it is in all our interests to foster entrepreneurialism at this time if we are to respond effectively to our changing circumstances, especially the

economic and social needs arising from them. By fostering I mean using the power of the state to work with the people, business and other institutions to achieve a rejuvenation of the commercial environment with an emphasis on the regions.

Our situation arises from the combination of things: Brexit, C-19, the commitment to tackle regional disparities, cultural changes based on new technology and the housing crisis. We are at a point of departure that should be treated as an opportunity that will not occur again this century. It is a situation that must be worked through with relentless determination over the course of several parliaments. There is no quick fix. It is time to make a sober and clearly articulated commitment to this enormous venture.

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[2]
<https://instituteforprosperity.org.uk/admin/resources/reports/2451-a-the-road-to-recovery-ppi-58-web.pdf>

COVID-19, Brexit and the Regions

by David Fellows (1)



The UK's ever expanding London-centred economy is destructive of communities in the regions and in London too. Continued progress in this direction will lead inevitably to an increasing displacement of community self-reliance by state provision for all aspects of personal wellbeing. In the December general election the UK Government challenged the prevailing London-centric economic and political orthodoxy by introducing a policy of 'levelling-up' for the regions.

In making this promise of greater opportunity for workers and businesses in the regions the Government clearly recognises the essential contribution of local government, employers, education sector, voluntary sector and many other representative bodies. It has regularly deferred to local responsibility and judgement as a driving force in this process of renewal. But the commitment to levelling-up is a

huge undertaking that cannot be delivered without coherent vision, leadership and major tangible contributions from Government.

The Government must, therefore, champion: greater higher education sector engagement with industry; the use of Government procurement to promote regional economies and help develop emerging businesses; a system of enterprise zones and free ports with special incentives for business to relocate and invest; the creation of regional investment institutions (to make good the lack of commercial credit particularly for regional business ventures); the introduction of integrated government export advice centres; and a decentralised Civil Service. To-date the Government's rhetoric has concentrated largely on transport infrastructure improvement which is just one part of the whole picture.

The Prime Minister has said that the Government will apply the concept of levelling-up to delivering the country's emergence from the effects of COVID-19. Presumably this recognises the need for greater self-sufficiency relevant to the country's health service supplies, reversal to some extent of the country's more general vulnerability of attenuated supply chains and the restoration of business confidence.

COVID-19 has demonstrated the relevance of home-based digital communication to this agenda. It has been used by ministers, MPs, civil servants, and very large numbers of employees in the public and private sector. It has supplanted most international business travel. This demonstrates that the proximity to London can no longer be regarded as essential for public or private sector business. The timing of Brexit is also relevant as it has provided an expectation of change and greater self-reliance, freed from the restrictions of

excessive EU regulation.

In this situation the regions can usefully provide more cost-effective corporate headquarters and ministerial offices located alongside major manufacturing plants and administrative centres. In personal terms, families can be freed from the anxiety of huge debt repayments for expensive and cramped accommodation in inner London or slightly larger but expensive accommodation in the London commuter belt. More affordable homes become feasible in places that can readily accommodate urban development with fewer people being uprooted to work in London.

The delivery of levelling-up has become both a test of political integrity and an appropriate form of recognition for the shared commitment and sacrifice that has been evidenced across the country and must continue in various ways for an indefinite period. It is an idea whose time has come.

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Virtual Schooling in the United Kingdom

by David Fellows (1)



The closure of schools to combat Covid-19 is a dramatic response to the virus that presents significant challenges concerning the continuity of education and the pupil/teacher relationship. This article offers some thoughts on the application of digital technology to support school-aged education at home whether made available by their normal school or stand-in facilities that come to market. Reference is made to virtual schools already in existence, home schooling networks and relevant BBC materials that are already available.

The Virtual School

Schools in the UK are at different stages in their use of digital communication. The Covid-19 virus lockdown involving school closures is both a challenge to the continuity of education and an opportunity for schools to extend the range and sophistication of teaching aids, methods of communication with pupils and parents and collaboration within the teaching community.

The technology requirements necessarily follow the interactions between the teacher and the student: programmes of learning; lesson plans and notes; conversations between teachers and pupils (both on a personal basis and open dialogue for class participation); the provision of source material; the setting of course work questions, the submission of responses and the return of work with marks and comments; examinations set and taken; student records maintained and reports issued. All these interactions can be provided in formats devised by the teacher or supplied by developers.

Online document stores(e.g. Dropbox, Google Drive) can be used for distributing: programmes of work; lesson plans; teacher's introducing the year, term, week or learning programme via video recording; video recordings of lessons (the presenter need not necessarily be the teacher); lesson notes and with references to supplementary material that can be found in text books or on the web; work sheets for online completion; or headers for projects and essays. All this may need adult support for younger pupils.

Document handling systems can be used for: questions of

clarification and answers from teacher (transparent to whole class); lodging responses to assignments (allowing teachers to see at a glance who has returned an assignment and who has not); tick-box answer sheets; and class performance records held confidentially by teachers.

Video conferencing (e.g. WebEx, Skype, Zoom) is an excellent medium for: small groups working on difficult assignments and personal interactions between pupil and teacher.

Email is a good all-purpose facility. It can be used for: general document handling; the return of marked assignments; following up outstanding work; and dialogue between teachers and parents (e.g. parents advising of pupil's illness). It can fill virtually any gap in systems under development.

Social media can facilitate: short affirmative comments from teachers on class progress; general feedback from pupils/students on topics, levels of difficulty, pace of learning; and general feedback from parents on demands placed on them but the tenor of these exchanges should be upbeat if they are to be sustained and this should be made clear at the outset.

Communities of practice can be developed between teachers using these facilities. For teachers the medium lends itself to sharing materials with colleagues.

This approach can be adapted to virtually every level of primary and secondary learning. Primary needs to bind in parents to a much greater degree in earlier years and the technology may present challenges when applied to entry level

although small group teaching by video conferencing with adult support at home could prove practicable with a preparatory session for adult helpers prior to a group of lessons on a particular topic. It has to be accepted that equipment must be available either from home, school, library or community centres (it has to be acknowledge that communal facilities may not be available).

Acquiring Proficiency

The starting point for the development of virtual schooling will depend on current use of the technology by individual schools. With encouragement by head teachers and centres of expertise within the teaching body and through external support arrangements rapid progress is perfectly feasible. Costs can be quite limited at the outset and as the proficiency of teachers and students develops through experience decisions can be taken about increased sophistication of design concept and technology.

The processes and formats will develop naturally through familiarity and experimentation. Pupils and parents can be expected to offer useful contributions. At each stage of development some institutional choices will need to be made concerning objectives, facilities, management and technology to avoid the aggregation of a multitude of systems, licenses, technology support arrangements and the dissipation of expertise. Nevertheless, scope for personal choice by groups of users is likely to facilitate adoption and improvement.

Learning from Others

There are a variety of universities in the UK and around the world that offer online courses and together with the UK's Open University (operating largely as a virtual college) they offer a great deal of readily accessible experience.

Specifically focusing on the UK's primary and secondary school sector there are a number of institutions offering material and advice:

- The BBC offers an extensive package of content for both primary and secondary pupils in its Bitesize series. GCE level material is tailored to the various examination bodies. Details can be found at: www.bbc.org.uk/bitesize. This material could be used as the basis of school-directed home working. The BBC has announced its intention to expand this service following the Covid-19 school closure announcement.
- There are also several groups that use the internet to support those families that have opted for home education as a long-term preference, including: The Home Education Network and Home Education UK.

Australia has several institutions that have developed into virtual schools and these could be used as models by UK schools that wish to continue to direct the work of pupils registered with them during the closure period:

- Western Australia's School of Isolated & Distance Education (SIDE) supports students in remote areas, students living with their families abroad and those whose lives (say in the artistic field) are difficult to

reconcile with conventional school attendance. Digital technology is used for: online learning management (Moodle System); conferencing (WebEx); and a learning materials library. Email is used as a general communication medium. There is also a site that provides parents with insights on student progress, assignment deadlines and school events.

A brief overview of the School can be found on Western Australia's Department for Education site at: www.det.wa.edu.au. The School has an extensive site at: www.side.wa.edu.au.

- The School of the Air was formed out of the Flying Doctor Service and is based in South Australia. Its ethos is one of immediacy of communication with its students. It uses WebEx for conferencing and Google Drive for materials. Its 25th Anniversary Report describes the origins and development of the School up to the present day. It can be found at: www.openaccess.edu.au.

Conclusions

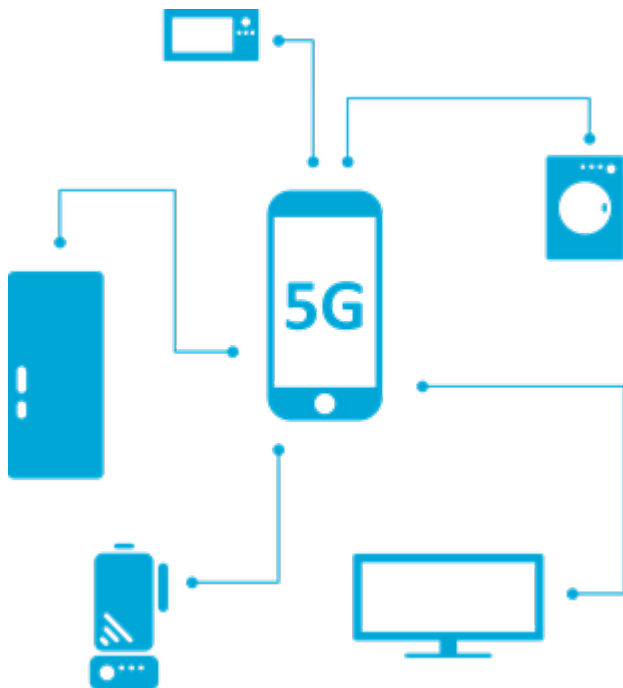
The use of document storage and handling systems for educational purposes is not complex but they can benefit from development and refinement following experience. The technology lends itself to the refinement of processes, editing of instructions and repurposing of teaching materials. The preparation of video-based presentations is feasible on various platforms as is video conferencing which can range from an inexpensive and simple format to more expensive offerings with a variety of sophisticated features.

The key issues for users to resolve include the rules of engagement, the choices of technology and the degree of uniformity in approach to be adopted within an institution. There is clearly scope for some initial commonality followed by experimentation and realignment in an iterative process.

Online communities of practice for teachers (and even for parents) may well be helpful to support continued development and problem-solving. School closures in Europe and now in the UK make this a regrettable but necessary moment that requires rapid progress in this field. The key challenge is getting the development process right: loose enough to draw the virtual communities of a school together giving them the opportunity to offer their contributions to the development of the initiative but tight enough to provide a thread of coherence and communal learning at school level. Importantly, where a virtual school is created out of an established day school under temporarily closure then it must find ways of retaining its ethos and identity. This represents an exciting and potentially rewarding challenge borne out of a grave situation.

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Progress with 5G Digital Coverage in the UK & Developing World Implications



Smartphone Technique

by David Fellows [1]

The 5G mobile communication offers the prospect of high bandwidth reception for rapid video downloads, gaming, instant replay coverage at major sporting events and simultaneous service to heavy concentrations of digital devices. It is a highly topical subject across the world including developing countries.

This article tempers expectations of widespread 5G coverage in developed countries on grounds of financial viability and suggests that developing countries are better served by centring digital infrastructure investment on broadband cable and lower frequency 4G mobile services.

Digital Communication costs and coverage

I start by introducing a sense of realism about internet speeds and coverage by looking at actual practice in the UK which has reasonably average internet services for a developed country.

Table 1: UK internet speeds

User	Mobile	Fixed Line	Comments
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Personal devices	4G (15/30 Mbps) 5G (2/100+Mbps)	Approx 30 Mbps (usually advertised as 50)	4G reaches 75% to 90% of the population depending on provider. 5G has hardly started(see discussion below). All-fibre cabling of 120 Mbps will become common in the next decade.
Small/ Medium businesses	—	100Mbps/ 1000Mbps	In this group call centres tend to need the higher capacity
Major businesses	—	1000Mbps+	

Note: 4G speed depends on provider and time of day [2], the better the infrastructure provision the better the service. 5G is said to relieve congestion although this too is infrastructure-dependent (see Table 3). For some time to come, even in developed countries, 4G will outstrip 5G coverage by some considerable margin.

In 2016 Universities of Cambridge & Madrid undertook a study [3] into the viability of introducing 5G mobile communication in the UK. Tables 2 & 3 summarise some conclusions from the study.

Table 2: UK Demographic Profile (total population 63 million)

Settlement Type	Proportion of Population (%)	Approximate Distribution of Total 5G Cost (%)
Urban	8	2
Suburban	62	19
Rural	30	79

Notes: (i) total cost adds capex & opex (see Table 3 below);
(ii) the study anticipates that the roll out of 5G will take place over the next decade.

Table 3: 5G Options for UK (selected from UC&M study)

Aspect	Option S2 £bn	Option S5 £bn	Option S8 £bn
Features	One 50Mbps network shared by 4 operators	Using competitive 50Mbps networks except for rural areas where a shared 50Mbps rural network applies	Using two 50Mbps networks shared by 4 operators except for rural areas where a shared 10Mbps network applies
Capital Cost	22	24	15

Revenue Cost (10 yr NPV)	13	17	10
Study Conclusion	Not viable; Scotland is dramatically more expensiveexcept for S8	Not viable; Scotland is dramatically more expensiveexcept for S8	Not viable; the lower rural bandwidth avoids the cost rising exponentially to cover the final 10% of population

Notes: (i) Most 5G signals are highly directional, require a direct line-of-sight between the antenna and the device receiving the signal and can be absorbed by humidity, rain, and physical object including trees, therefore they don't travel as far as the more robust, omnidirectional 4G signals (as a result they require very high aerial density and present problems for some applications under discussion such as driverless vehicles) [4]; (ii) 5G networks can make use of existing 4G aerial stock and cable support but the higher aerial density makes the transition from 4G very expensive; (iii) the cost of covering the most expensive 10% of population at 50Mbps is equivalent to that for the first 90%; (iv) the study assessed the total cost (capex & opex for 10years) of 5G coverage for the UK's rail and motorway networks would be £0.922bn & £0.253bn respectively.

Part way through 2019 several UK mobile service providers have commenced or announced their intention to provide 5G coverage. Some have published city roll-out programmes although details

of schedules, geographical boundaries and bandwidth are sketchy at present. None of this equates to a city-wide coverage commitment let alone national coverage. Unsurprisingly the focus appears to be areas of potential high traffic where improved service reliability will be the driving advantage. Available bandwidth could be as low as 2Mbps for entry level packages.

5G services may be offered for pop concerts, major sporting events, shopping malls, some public buildings and crowded city centres. Some of the infrastructure could be provided by venue owners or organisers as Wi-Fi is at present.

The European Union produced a policy document '5G for Europe: An Action Plan' in September 2016 that seeks to drive progress towards realising substantial financial benefits from the technology. The Action Plan, quoted in a recent review of the Commission's achievements, seeks to harmonise European preparations giving priority to infrastructure coverage of major urban areas and transport routes by 2025.

Implications for Developing Countries

1. Given the financial viability challenges in developed countries such as the UK it is clear that rolling out 5G services in developing countries will be hampered to an even greater extent by the financial returns required to support infrastructure provision.
2. 4G coverage is indisputably more readily viable than 5G and is a more obvious objective for developing countries for the foreseeable future. Governments need to consider their bandwidth licencing programmes accordingly.

3. Conventional public Wi-Fi systems can offer mobile text communication to supplement overloading of 3G and 4G reception in public areas with high demand for digital services.
4. In the author's opinion 4G mobile coverage and fibre-optic cabling of CBD areas for super high bandwidth communication offer the basis for viable digital communication strategies in developing countries.

General conclusions

1. At the present time commercial ambitions for 5G in the UK appear limited. The financial viability of the aerial installation costs on a large scale compared to 4G is a considerable constraint. For some time to come 5G may be largely confined to high income high demand locations and some venues where owners provide the necessary infrastructure as an added attraction. It is a solution waiting for a killer application or acceptance as a social status imperative. The current service and economic priority for mobile infrastructure must be the completion of 4G coverage. This reasoning would seem applicable throughout the world although it is reported [6] that Malaysia intends to adopt 5G fully by 2023. Malaysia is undoubtedly a leader in [digital technology](#) but this claim is something that requires clarification.
2. It is generally presumed that the long-term intention of 5G service providers is transmission speeds of 50+Mbps but at current revenue levels this form of coverage is deemed to be unviable in UK rural areas. The UC&M study suggests that shared rural networks operating at 10Mbps would reduce cost significantly and a broadly similar cost reduction could be achieved by omitting 10% of the population (equivalent to 33% of rural population) from 5G coverage. Even these two reduced service options

would still appear unviable assuming current service revenues.

3. The UC&M study hints that technologies under development may deliver significant cost savings for 5G provision although details of how this might happen are not well understood at present.
4. 5G viability in the UK and other developed countries would therefore seem to depend on some or all of: (i) restricted service provision targeting areas of high demand; (ii) technological advances bringing cost-savings; (iii) user willingness to pay higher fee rates for 5G than its predecessor services; and (iv) modest, possibly shared, bandwidth in rural areas.
5. Given these 5G service limitations, upgrading to 5G-enabled smartphones may be a nuanced decision for many users for some considerable time. Roll-out costs and user hesitancy will, in turn, impact commercial investment.

In My Opinion

1. Countries have much more to gain from improving the reach of 4G mobile communication than encouraging service provider interest in 5G roll-out which will be a niche offering for some years to come. Developing countries should not feel that they must jump now or miss the bus.
2. 5G mobile communication is not a natural alternative to fixed cable support for business purposes. In this market fibre optic broadband cable services offer the ideal of high bandwidth, service reliability and relatively low cost.

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[2] See: <https://www.ispreview.co.uk/index.php/2019/02/countries-ranked-by-4g-download-speed-at-different-times-of-day.html>

[3] See: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/577965/exploring_the_cost_coverage_and_rollout_implications_of_5G_in_britain_-_oughton_and_frias_report_for_the_nic.pdf

[4] See: [Lifewire https://www.lifewire.com/5g-vs-4g-4156322](https://www.lifewire.com/5g-vs-4g-4156322)

[5] See: <https://5g.co.uk/news/ee-5g-launch-plans-roadmap/4900/>

[6] See: OpenGov Asia (10th September 2019): <https://www.opengovasia.com/malaysia-will-fully-adopt-5g-by-2023/>