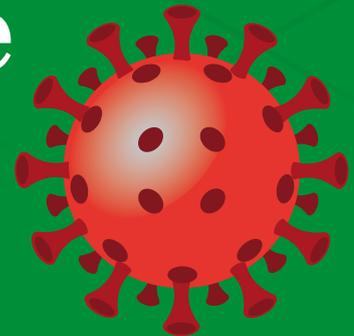




COVID-19, Virtual Operation and the Implications for Productivity



Professor Colin Coulson-Thomas.

COVID-19 lockdowns, local restrictions and consequential slowdowns and/or recessions, have resulted in new ways of working and operating and related changes to business models and priorities. Could they be a significant building block in efforts to improve productivity? Much will depend upon whether one is looking just at labour productivity, returns on technology investments or changing combinations of people and technology. Might consequential changes in behaviour and physical infrastructure also yield environmental benefits, reduce pressure on natural capital and lead to more

balanced lifestyles and a better use of time?

There are both outputs and inputs/costs to measure and consider, and also contending factors to balance. For example, concerns about the loss of jobs and outputs in city centre business districts, as fewer people visit offices and nearby coffee shops, sandwich bars and other retail outlets, have to be balanced against the possibilities for more services to be provided closer to where people live and may now also work. Retail jobs may also be replaced by those in distribution and the support of people who are spending more time working in their homes.

Assessing differential impacts

Overall changes in productivity can conceal differing short- and longer-term impacts. Much will depend upon relative measured levels of productivity in activities that are allowed or enabled to continue, and those that are restricted or closed down by Government intervention. Should the adverse circumstances of a pandemic result in less efficient and productive players failing, average levels of productivity might increase. However, some restrictions imposed by Governments may apply to all sectors and be more neutral in their impacts.

Lockdowns could impact disproportionately upon either higher or lower productivity activities. Where highly productive sectors of the economy are closed down, overall productivity might fall. Conversely, it might rise if less productive areas are disproportionately prevented from operating. Labour productivity could rise or fall as people are laid off, depending upon whether outputs fall by a lower or higher proportion. One might expect the most productive and value adding allowable activities to be the last to be closed.

Assessments of productivity can depend upon assumptions made, for example, whether or not furloughed employees are included in output per person. In some contexts, output per hour measures could be problematic due to uncertainty as to hours worked in virtual settings, when the emphasis may be upon outputs delivered rather than inputs of time at a particular work location. Comparisons of pre- and post-COVID-19 outputs might also be complicated by a change of focus and priority. For example, a hospital might cancel routine and non-urgent operations in order to treat a smaller number of high-risk coronavirus patients.

Accounting for associated costs

There may be additional costs to consider. The expense of sanitising hands and work environments, and social distancing requirements might increase the cost of people relative to technology, especially where the capability and performance of the technology in question may be increasing exponentially. Unlike people whose hours of work may be limited by family, social, physical, welfare and/or legal requirements, particular digital and other technologies might be available 24/7 until maintenance is required or their replacement.

Social distancing requirements might mean that fewer people can be accommodated at a particular work or leisure location. Various options, from extending hours or introducing shifts, might allow greater utilisation of fewer items of equipment or offices, but much will depend upon health and safety considerations, the reactions of the people involved and the nature of the activity. Management decisions may be complicated by uncertainty concerning how long requirements and restrictions might last and expectations of future changes.

Might financial cost or expenditure measures replace per-person measures so that a fairer comparison can be made between people and technology? Public sector productivity assessments may need to take account of unusually high levels of expenditure and changes, whether increases or decreases, in levels of activity as a consequence of COVID-19. The speed with which measures and initiatives have been rolled out may have reduced the time for traditional value for money, productivity

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and procurement practices. Some of the hastily introduced measures to address an unprecedented situation may not meet expectations.

Embracing virtual operation

Virtual teams and responsive network organisations have operated since the dawn of the internet age (Coulson-Thomas, 1992). Why have they not been more widely and quickly adopted? Have habit, innate conservatism and the start-up and adjustment effort required to effectively change deterred people and organisations from being more flexible in terms of where, when and how people work and with whom? Given the wide range of tasks that many people are involved with and their differing circumstances, why have so many organisations persisted for so long with standard ways of working at particular fixed locations?

Given the steady fall in the cost of digital technologies, their democratisation and their expanding capabilities, in many cases at an exponential rate, one could argue that now is an opportune moment for laggards to embrace them and virtual operation. In response to a global pandemic, Government intervention has forced people and organisations to change. They have often been relatively quick to react. Many homes harbour mobile and other technologies that match or exceed those available at some places of work. However, the availability of technology is not always matched by understanding of how to use it safely. Guidance may be required to prevent the misuse of widely available tools (Moyce, 2020).

Mobile technologies enable people to communicate, interact, and work and learn as and when required 24/7, including when on the move. Time saved from commuting journeys with their traffic jams and/or crowded public transport can be used for working and living. Some homeworkers find they have more time to think and quietly reflect. They may also be able to do this in locations that are more conducive to thought and creativity. They may have greater freedom to select those with whom they interact. Avoiding start and end of day journeys to a workplace can open up new opportunities to contact people in a wider range of time zones.

Assessing Financial Consequences of Virtual Operation

A MORI survey of individuals working from home during lockdown and undertaken on behalf of Deloitte (2020) found that 38% reported a negative impact of lockdown on their wellbeing, but 55% of the workers reported that their colleagues were just as, if not more, productive than before. Reactions to COVID-19

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can also give rise to better resource utilisation. For example, the majority of cars are parked for most of the time. Their reduced use for journeys to and from work and/or their greater shared use when safe, could allow resources involved in their manufacture and maintenance to be used more productively. Virtual operation could yield a reduction in vehicle and related costs for some people and organisations.

Direct labour costs can be very different from total employment costs when the expense of premises and facilities are taken into account. Office costs can mount up when local authority rates, utility bills and the cost of meeting legal and regulatory requirements, and support services from switchboard operators to cleaners are taken into account. They may be largely unaffected when just a few people occasionally work remotely. If people work from home, or another more local location, for only a small part of the time, the potential for reducing building and infrastructure costs may be limited. One might also see greater investment in work related technology and infrastructure, as facilities are required in more than one location and there is greater use of mobile and portable technologies. However, when significant numbers begin to work virtually and hot desk when attending particular meetings, it may be possible to rationalise an office estate and secure significant savings.

Ensuring all costs are included

When changes of business model or working practices occur assessments need to make sure that some areas of cost are not overlooked, such as the cost of disruption, the cost of setting up new arrangements and any opportunity costs that arise. A switch to virtual operation or from physical retailing to online shopping with fulfilment from a centralised warehouse could result in a significant productivity gain in relation to the people involved. However, overall before and after financial comparisons could depend upon set up, roll out and/or expansion costs, crawl out



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costs from unexpired lease commitments and receipts from the sale or redevelopment of unused office space or retail premises at a time of marketplace glut.

Unexpected issues can occur and support mechanisms should be in place to achieve a change such as to working from home (Parker and Jones, 2020). In the short-term, there may be a variety of matters to address such as health and safety, data protection, confidentiality and cyber security issues. Employers have a duty to ensure a safe working environment and may have to undertake risk assessments, provide equipment for home workers and reimburse any additional expenses they incur. Insurance cover may need to be reviewed to ensure those working remotely are covered and arrangements made in areas such as counselling support and the protection of confidential and personal information.

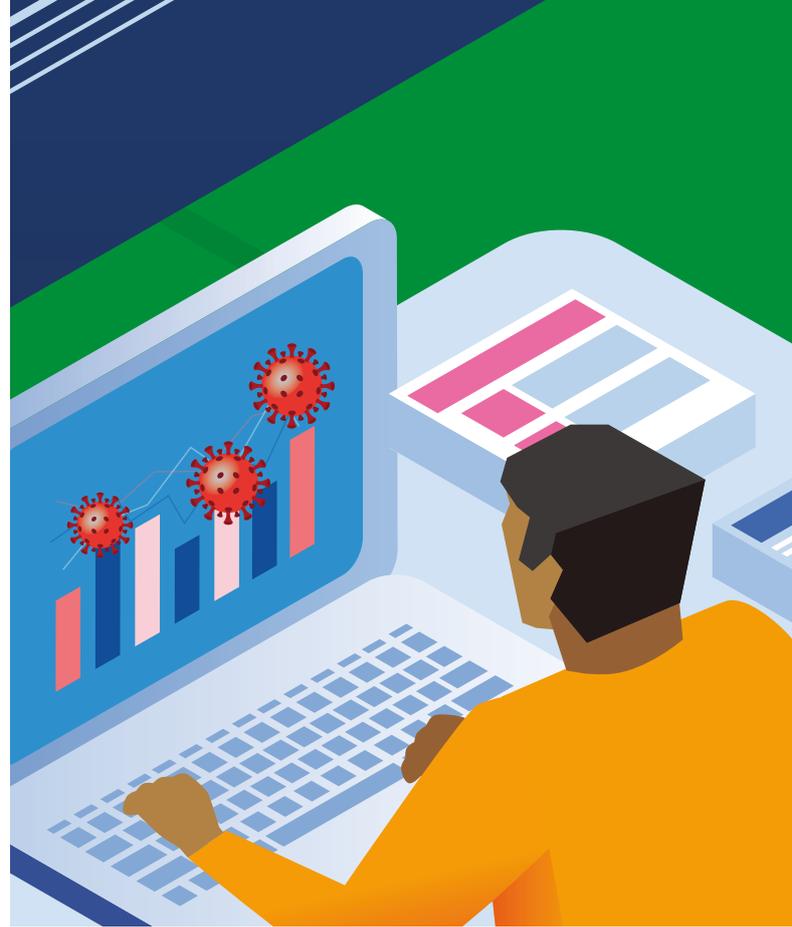
Outputs and costs can change. They may need to be monitored during and after transition from one business or operating model to another. As more people work from home, savings from rationalisation, reorganisation and consolidation of corporate premises may take time to realise. There may also be push back from those involved, which can vary over time as situations evolve and people reassess the advantages and disadvantages of different patterns of work. How a change is perceived can depend upon whether it is voluntary, temporary and variable or imposed, permanent and fixed.

Consequences of new ways of working

People vary in the extent to which they are self-motivated, inwardly directed and able to work on their own in a different context. Some may benefit from the presence of supervisors and colleagues, and be easily distracted in different circumstances. Their supervisors might worry that some teleworkers may opt to use any efficiency gains to free up more time for non-work related activities, rather than maintain or improve quality or increase output. Perhaps they might be inclined to rush through their work responsibilities as quickly as possible, rather than think or go the extra mile. Such thoughts can unsettle managers who are used to greater control. A lack of trust may spur a drive to remotely monitor work-related activities.

Isolation at home can prevent the physical interaction that is often conducive to creativity. On the other hand, some people might use distance from supervision, their greater freedom to think for themselves and an opportunity to access a wider range of digital contacts to reflect, question and challenge. Not all workplaces are hives of creative interaction, productive meetings, active sharing and collective learning. A growing range of tools can support virtual collaboration and joint working on shared documents and collective tasks. The potential of any way of working can depend upon the context, and the people and personalities involved.

Enforced homeworking due to a lockdown can yield immediate benefits, such as time saved from commuting journeys and fewer interruptions from colleagues (Gascoigne, 2020). Some teleworkers become very productive and crack on through their routine work and backlogs. They may have to take care to avoid over-working and might need to consciously try and achieve a better work-life balance. Imposed full-time homeworking can have different implications than a voluntary choice by an individual according to task or role, and as and when desired and



appropriate, raising practical issues. Childcare and home schooling were particular problems for many people during the initial enforced UK lockdown.

Allowing time for changed arrangements to settle

Over time, some people begin to miss physical interaction with others and the sharing of experience, knowledge and understanding, that can be more stimulating than working alone and more conducive to innovation. Depending on personal circumstances, working from home for any length of time can also result in adverse reaction from other family members who find themselves unable to use space and facilities that were previously more available. Teleworkers may start to feel distanced from colleagues and cut off from the office grapevine. They might think they are 'out of sight and out of mind', lost within a larger team, and at risk of missing career and development opportunities (Gascoigne, 2020).

Virtual operation is easier for some activities, tasks and roles than it is for others. Certain personal services, such as hair dressing require the physical interaction of individuals. Virtual dentistry beyond the giving of advice in areas such as hygiene may be problematic, but many interactions between doctors and patients are now by telephone and video link, as the use of various forms of telemedicine spreads. Embracing digital technologies, greater automation or a different business model, can increase the range of what could become a virtual activity and so hopefully increase flexibility and resilience.

Steps such as providing alternative ways of collaborating, sharing and interacting, being visible and having access to support services and opportunities, can be taken to address particular problems of teleworking. Practical advice could be given on different aspects of working at home and other locations. Thought could be given to how policies and support may need to change when restrictions ease. Should people be given more



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flexibility in terms of where, when and with whom they can and should work, depending upon task, individual preferences and team requirements? When groups and communities are involved there is some evidence that co-workers operating from home can negatively impact upon team performance (Van der Lippe and Lippenyi, 2020).

Ensuring balanced assessment

Whether or not new patterns of work introduced in response to COVID-19 will result in significant changes in productivity, and operating and overhead costs will depend upon the extent to which they continue and result in sustained improvement and/or innovation, and/or people and organisations revert to previous practices. In time, the initial attraction of working from home may wear off. In the absence of lockdown and other restrictions, this may lead to a return to traditional patterns of work. In certain organisations, activities and locations, might enthusiasm for virtual and teleworking wax and wane in a succession of waves?

COVID-19 and some reactions to it, have complicated the assessment of productivity and especially its financial implications, depending upon the approaches and techniques that are used. There may also be trade-offs to consider, for example as a result of a desire for greater flexibility, resilience and/or social distancing. Hitherto, many organisations may have had greater discretion to introduce changes. As a consequence of COVID-19, social distancing requirements, and imposed lockdown and other restrictions are forcing changes of working practices. These might have implications for others and beyond the people directly affected.

Overall, the global pandemic has highlighted many issues with widely used methods of assessing output and performance. It has led to a period of instability in various indicators as a consequence of economic slowdown and recession, followed by partial recovery and further waves of disruption and accompanying higher levels of unemployment. Non-traded outputs such as

people voluntarily helping their neighbours, or those shielding, are rarely considered.

Embracing wider considerations

Externalities, whether of costs or benefits, are taken into account in some major projects and certain public policy decisions. However, they are not included in many corporate assessments. Might the pandemic, which has made more people aware of externalities, result in significant changes? During severe lockdowns, environmental improvements were noted in areas such as traffic fumes, but these can be reversed. For example, advice against the use of public transport might cause a longer-term increase in car journeys for certain purposes.

The nature and make up of some categories of externality are changing. For example, the global pandemic and related changing patterns of consumption, living and working, have also affected the content and distribution of rubbish and waste. Packaging associated with online shopping and home deliveries, might now be more evident in some residential areas. Specific COVID-19 waste includes used face-masks and personal protective equipment. These need to be disposed of responsibly if they are not to pollute beaches and the world's oceans.

Corporate and broader measures of productivity and performance often include outputs that are undesirable, for example because their production involves the use of fossil fuels that contribute to global warming. The costs of some raw materials and natural capital of which there is a diminishing supply, fall short of their replacement costs. Raising productivity and economic recovery might increase the environmental and health damage caused by some outputs. Responsible leaders ensure assessments reflect externalities, natural capital, environmental and social considerations, as well as sustainable development goals.

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