The Impact of Covid-19 and Lifting the Lockdown –

Resuming Business Operations:

Issues for the UK's
Innovation, Research & Technology

STAY ALERT
CONTROL THE VIRUS
SAVE LIVES

AIRTO – The Association of Innovation, Research & Technology Organisations

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Introduction

AIRTO represents the UK's Innovation, Research & Technology (IRT) sector (encompassing Public Sector Research Establishments, PSREs, Catapult Centres and long-established Research & Technology Organisations, RTOs), which employs more than 57,000 highly skilled people and adds an estimated £34Bn of GVA per annum to the economy.

The IRT sector is a world-class asset. By utilising it at full capacity the government can ensure the sector plays a central part in the UK's strategy for growing research and development (R&D) to 2.4% of GDP, and stands to gain global competitive advantage by improving the scope and productivity of UK industry. In a world faced with the Covid-19 pandemic, R&D activities potentially bring an even greater benefit to economy and society, both that R&D which is focussed on tackling the disease (diagnostics, vaccines, intensive-care technologies), and that R&D which underpins our supply chains, business ecosystems and economic success. Investment in R&D leads to innovations, including those that can stimulate business and economic growth, improve efficiency for delivery of essential public services and inform the regulations which protect public safety and orderly trading in goods and services. In developed economies a country's scientific and technological capabilities play a central role in its industrial strategy and are a key part of any plan to enable economies to grow. Countries with a higher level of investment in R&D reap the benefits to their economy, by supporting and attracting R&D intensive high growth industries, such as automotive, pharmaceuticals, aerospace, high-value manufacturing, electronics, telecommunications. This, in turn, boosts regional growth, by creating jobs and wealth in local economies – all the key ingredients for repairing our economy and returning to prosperity. The government, therefore, needs to continue supporting the UK's IRT sector, as part of its Industrial Strategy to return the nation back to a healthy and prosperous footing. In turn, the organisations that make up the IRT sector need to be prepared to optimise the resumption of operations that have been halted during Covid-19.

The main assets of organisations in the IRT sector are the knowledge and expertise that reside in:
- **the people** – their employees are their human capital, a talented and highly qualified expert workforce;
- **the capital infrastructure**, including the unique test beds, laboratory facilities and technical capabilities upon which government and businesses rely for innovation services.

The period of time during the Covid-19, will have a huge impact on how employees feel about their employers. Organisations will need to react with empathy, compassion and patience to tailor working practices to what individuals can accommodate, whilst recognising strengths and weaknesses, if they are to optimise their workforces to deliver.

This paper aims to help policy makers and organisations in the IRT sector navigate decision making by:

i.   summarising the impact of Covid-19 on the IRT sector;

ii.   explore issues IRT organisations are facing and will need to tackle in preparation for the UK's eventual phased lifting of the 'lockdown' to allow business operations to resume.

Impact of Covid-19 on the IRT sector

Since early March 2020, organisations in the IRT sector, both large and small, government owned and private, have begun to encourage home working of staff where possible to limit the spread of the virus responsible for Covid-19. From 23 March 2020, the government introduced strict curbs on the movement of the population with its '**STAY AT HOME, PROTECT THE NHS, SAVE LIVES'** strategy. The impact on IRT sector organisations was as follows:

Reorganisation of the workforce, putting safety first
1. Staff in senior management, project management and office-based roles and some laboratory roles began working from home.

2. Some essential laboratory, field-based workers and facilities management staff continued work on site to allow critical functions/programmes to continue in organisations where work underpins national infrastructure or safety/quality frameworks. In these situations, laboratories are undertaking risk assessments and instituting social distancing and other infection control measures, such as use of PPE. Examples of this include NPL's atomic clock, NIAB's agronomy services, BRE's fire safety work, Campden-BRI's food safety testing, LGC's pharmaceutical product safety and quality testing.

3. Staff in laboratories, or field-workers working on projects deemed currently non-essential, who were unable to continue working from home, have been furloughed under the government's Job Retention Scheme. In some organisations up to 80% of the workforce has been furloughed, with some redundancies occurring.

Impact on finances
1. **Revenue:** Since much of the income of IRT organisations is derived from laboratory and field-based work which has been halted, revenue for March and April 2020 has dipped, especially that which comes from commercial sources. Some organisations will see customers suffer financial hardship and halt outsourced R&D contracts etc., further impacting on revenue for this year and possibly future years. If customers' businesses fail, bad debts and the negative impact on revenue streams will persist for some time.

2. **Cashflow:** As a consequence of the fall in income described in 1, above, organisations are reporting issues with cash flow. Without access to government support some organisations were reporting that they would struggle to meet payroll in April.

3. **Expenditure:** Some organisations have reported budget cuts to partially alleviate financial difficulties. Spending on items such as travel have naturally reduced because of the restrictions on movements, but expenditure in other areas such as IT has increased as organisations seek to equip staff to work from home. After the government's Job Retention Scheme ceases, some organisations may need to consider redundancies.

4. **P&L:** For organisations whose financial year runs from 1 April, some impact on profit is inevitable, but the bulk of the negative impact on profits will kick in from April 2020 onwards. For organisations with a largely commercial customer base, considerable financial losses are anticipated.

5. **Balance sheets:** Many of the organisations in the IRT sector are not for profit, so surpluses are ploughed back into the organisation for future investment. Reserves on balance sheets are unlikely to see growth in the short term and are more likely to shrink as assets are drawn upon to prop businesses up. For some organisations, debts will grow, especially if businesses have had to rely on

loans. Some organisations are not in a position to take on loans because they lack the assets against which to secure debt. Recapitalisation of such organisations without government assistance will take many years of operation, largely without any buffer against future crises.

Mitigating actions:
In a [letter to Innovate UK](), AIRTO called for some immediate steps actions to alleviate the pressure on organisations in receipt of Innovate UK grants etc. to help 'buy' some precious time for strategic planning and more immediate cash flow management for survival, as outlined in the table below:

Issue	Action required by UKRI/Innovate UK
Continued access to project grant funding: In line with the government's action to request that immediately non-essential activity and geographical movement in the population ceases, labs and their business and SME partners have 'downed tools' on projects and programmes, but still need to pay their staff and maintain a revenue stream so that they are available to resume work and help get the country moving again once the crisis has passed. Those in receipt of funding (grants, loans etc.) from Innovate UK, under the current rules, will be unable to draw down funding by the end of the current quarter and financial year ending (31 March 2020) if this is tied to project milestones. This, in turn, will create a cashflow issue for many of our member laboratories.	Urgent action by Innovate UK to **allow funding to be 'drawn down' on grants etc.**– even in the absence of project milestones being delayed.
Identifying 'key workers' in laboratories: Some organisations are simply not able to request that all staff work from home, if they are going to keep certain critical operations moving to support the country**. Some members are therefore very concerned that they need certain roles to be identified as key workers to ensure their children can be cared for whilst they work. E.g. food safety work.**	**Clarification is still needed for roles delivering** critical services which are being impeded by this issue for activities, which are going to impact directly on the population and on the UK in the months ahead. AIRTO has already raised this with the Department for Education, but anything which UKRI could do to highlight the urgency of this problem would be helpful.
Diminishing R&D budgets of customers including SMEs: Many laboratories, by virtue of their mission to serve the research and innovation needs of businesses in the UK, undertake scientific, testing and analytical work for large companies and SMEs. At this immediate moment, many of those companies are facing tremendous financial pressures. Some wish to retain investment in R&D but are not currently deploying funds because project work that has been contracted to laboratories has come to a halt. Others are having to slash budgets in order to survive and support their employees. The pressure on SMEs is particularly intense. In the more medium and longer term, as businesses try to get 'back on their feet' once the crisis begins to dissipate, we are likely to see continuing downward pressure on R&D budgets.	**Urgent action by government** to support those organisations which invest in R&D and outsource projects to IRT sector laboratories. This includes support to encourage large businesses to continue investing in R&D once the crisis period is over – essential to helping to kick start the economy, and to help the UK continue towards its goal of seeing 2.4% GDP for R&D by 2027. The government must protect the pledges to R&D spending announced in the 2020 Budget. For innovative SMEs in particular, measures need to be taken to ensure business survive in the short-term.

Issue	Action required by UKRI/Innovate UK
Harnessing the capabilities of the IRT sector: Some of the IRT sector's talent is already being directed towards solutions for tackling Covid-19, e.g. via development of clinical testing methodologies and the Ventilator Challenge. However, many IRT organisations are having to furlough some staff who are not able to continue work on existing projects. These capable, creative and highly trained individuals represent an asset to UKRI/Innovate UK and should be harnessed. If public funds are being used to continue employing staff those skills should be deployed to positive effect.	**Identify opportunities to commission new research** that is presented by the unique circumstances presented by the UK population's movement restrictions, so as to avoid furloughing skilled staff. Examples of such opportunities for research and learning lessons from the situation, relate to some of the UK's Grand Challenges, including: • The impact of changes in transport and population movement on carbon emissions and the environment. • The implications of social distancing for the ageing population and application of technological solutions to those isolated in their own homes. • The implications of an increase in homeworking on our national infrastructure, built environment and national IT/internet capacity.

Lifting the Lockdown – Resuming Business Operations:

Resuming business operations is critical to the UK's economy and to the viability of the IRT sector going forwards. However, these needs must be balanced with the need to protect the NHS and save lives, by restricting the spread of the virus. The government is cautioning against the lockdown being lifted too soon, on the basis that successive waves of the infection, will cause more damage to both public health and the economy in the longer term than extending the initial lockdown.
Hence, the UK government has set out **five criteria** that must be met for the decisions to ease the lockdown to be taken:

- Making sure the NHS can cope

- Evidence showing a sustained and consistent fall in daily death rates

- Reliable data showing the rate of infection is decreasing to manageable levels

- Being confident in the range of operational challenges, like ensuring testing and the right amount of PPE, are in hand

- Being confident any adjustments will not risk a second peak

It is not clear at what stage these criteria will be met, but organisations must begin planning to resume business operations, and consider issues that will arise. It is likely that restrictions will be lifted in a cautious and phased manner, and it is unlikely that protection of a vaccine for the population as a whole will be a reality until at least 2021. A new 'normal' will prevail in the plan to 'revive' the UK economy. Health and safety considerations are paramount.

Businesses have been debating at length how best to resume activities. **Five key principles** are emerging:

1. There is a common and shared belief that public health should not be compromised.
2. There should be a phased approach to resuming business, and this may be dictated by the scope and limitations of social distancing. For example, it is clearly easier to social distance people in an outdoor, open space (such as a landscape gardening enterprise) than in an indoor and highly confined space (such as on board a commercial airliner).
3. There must be a unified approach.
4. There is going to be a degree of prescription/direction from government.
5. 'Building back better' needs to be a goal; on resilience, fairness (e.g. across generations), productivity.

When considering resumption of activities, businesses must refer directly to, and follow, the UK government's guidance on 'Staying alert and safe social distancing'. Further guidance is available from the Health and Safety Executive (HSE) in relation to 'working safely during the coronavirus outbreak'.

There are opportunities to learn from some sectors that have continued with working during the lockdown, including construction, manufacturing, food retail, if PHE guidelines are followed with appropriate social distancing. Staff in vulnerable groups with underlying health conditions may need to remain at home until a vaccine is available. This all points to a situation where organisations need to consider re-organising their work streams and work forces in the medium term, at least until the end of 2021, before which point a vaccine is unlikely to be available across the whole population. The workload and the workforce will essentially need to be redistributed across two dimensions:

A. Home working   and   **B. Site/field-based working**

It should be noted that reorganisation of workstreams and workforces could present an opportunity for strategic review that may present significant opportunities to boost productivity. Many lessons will have been learnt during the period of unplanned home working that businesses can apply to their benefit in the future. The devastating societal and economic consequences of Covid-19 are tremendous, but it must be noted that in some areas businesses and the UK stand to benefit from the opportunities presented by reorganising businesses and increased home working, such as levelling up regions, reducing transport and emissions and driving diversity and inclusion.

This unprecedented period of time will have a huge impact on how employees feel about their employers. Organisations will need to react with empathy, compassion and patience to tailor jobs to what individuals can accommodate and their vulnerability to the virus, whilst recognising strengths and weaknesses, if they are to optimise their workforces to deliver. Considerations of key issues for organisations are as follows:

Whilst for some work and jobs it is not possible, working effectively from home (WEFH) is going to be key to helping businesses resume operations in a safe, productive and profitable manner. Critically, it will enable them to retain staff who are especially vulnerable to the virus because of underlying health conditions along with their specialist knowledge and expertise. It will also alleviate the pressure of 'people density' in laboratories and offices, by enabling businesses to operate with fewer people 'on-site'. Challenges and opportunities associated with WEFH include:

- **Equality of opportunity**: Disparity may emerge in employee relationships between home based and site/field based staff, because of actual or perceived inequalities in exposure to risk from the virus, and flexibility around working patterns – there is a risk of a culture of *'haves'* and *'have nots '* emerging. Alternatively, some staff may feel that in the ideal situation, home is their 'restorative place' and that organisations have requisitioned their homes as offices with there being little or no consultation or choice on the matter. However, on the positive side, WEFH could present an opportunity to improve diversity and inclusion in the workforce.

- **Work life balance and mental wellbeing:** Boundaries between work and home are critical to mental health, especially when staff are balancing work in the home environment with caring responsibilities at home. Some staff will find it hard to turn off from work. Loneliness may be an issue for some staff too, especially for those living alone, once social aspects of work, such as 'water cooler' moments are absent. Organisations will need to replace informality with agenda-free interactions, such as online tea breaks etc. Employers must consider their legal responsibilities for the safety and welfare of staff in this context.

- **Line management:** to be effective remote working should not feel remote, empathy is key, recognising that different staff will be working under different pressures. A high level of trust is required for success. This is an opportunity to relax micromanaging and hierarchies and presents an opportunity for people to be acting with more autonomy, with agility to innovate. Key ingredients for productivity – clear purpose, clarity and intent on what the workforce are being asked to do in relation to strategic objectives. This is always the case but may need revisiting as part of adjusting to WEFH.

- **Communications**: visibility of leadership will remain key, so optimising virtual team meetings, and video conferencing is critical. However, over communicating can be a risk – purposeful communication is critical to avoid straining the diary with extra demands.

- **Working conditions:**
  1. IT: issuing appropriate IT kit at scale for a sustained period will bring logistical and financial implications – many organisations have been coping in the short term with staff operating with laptops. This also presents issues with security and cybersecurity protocols.

  2. Physical space: health and ergonomics associated with workstation safety.

  3. Physical space: other people (and pets) will be at home in the workspace – possibly children, in the absence of fulltime schooling/childcare.

4. Absence of face to face business networking: for many staff, especially those with underlying health conditions, attending business meetings, customers interactions, and conferences/networking opportunities, are going to need to be replaced with virtual interactions. It is worth noting though that virtual accreditation renewal visits for testing laboratories seem to have so far gone very smoothly and cost effectively, a practice that could very well be carried further into the future with benefit to all concerned.

Some jobs simply cannot be done outside of a laboratory or field-testing environment. To continue working in these environments, reducing 'people density' and enabling 'social distancing' in laboratories and offices and while travelling is key, thereby operating with fewer people 'on-site'. Challenges and opportunities associated with this include:

- **Equality of opportunity:** Disparity may emerge in employee relationships between home based and site/field based staff, because of actual or perceived inequalities in exposure to risk from the virus, and flexibility around working patterns – there is a risk of a culture of *'haves'* and *'have nots '* emerging, with some staff feeling the benefit of things like reduced commuting time and costs, and others not.

- **Line management:** situations may arise where staff are being managed by managers who are remote working. Line management structure may need to be revised to accommodate needs for appropriate supervision of staff.

- **Communications:** where leaders are working remotely, visibility of leadership will remain key for site-based staff, so optimising virtual team meetings, and video conferencing is critical. However, over communicating can be a risk – purposeful communication is critical to avoid straining the diary with extra demands.

- **Working conditions:**
  Physical space risks – reducing the density of people in offices, laboratories, social spaces (canteens), toilets and corridors is going to be critical, so social distancing can be maintained. This may require:

  - Shift-working to reduce the number of people on site at any one time.
  - Combination of home and site working patterns for staff where possible.
  - Deployment of one-way systems and routes to avoid people passing close to each other, with marked lines on floor and clear signage, deploying marshals as necessary to oversee this.
  - Limiting areas where each staff member is permitted – no-one will have free access to all areas. Limit access to social spaces and canteens. Equip closed spaces with more controlled access systems.
  - Increasing infection control measures, such as hand sanitiser dispensers and hand washing protocols.
  - Reducing touching of communal surfaces, e.g. by introducing automatic doors.
  - Reviewing cleaning regimes, especially for frequently touched surfaces, such as handrails.
  - Limiting visitors to site.
  - Increasing symptom surveillance of staff so no one is to be allowed on site with coughs, cold symptoms etc.
  - In some laboratory spaces, introduction of (Perspex) transparent screening may be needed to reduce contact between staff.
  - Face coverings to be worn at work. This may present security access and control considerations. How will intruders be recognised? Face recognition will be compromised, both by automated facial recognition systems and by staff colleagues, including security staff.
  - Consideration of the impact of new working arrangements on the operation of access control systems to restricted areas e.g. via swipe passes etc.

Task based risk – reducing the contact that employees have with one another and surfaces whilst carrying out tasks is going to be critical, to minimise the scope to spread of infection. This may require:

- Risk-based reviews of protocols so that team-based tasks, involving more than one staff member working in close proximity are restructured to allow for social distancing.
- Review of tasks requiring more than one person to hold or secure an object or subject. In such instances, if the protocol cannot be adapted to remove the risk, then consideration should be given to appropriate use of PPE, and provision made accordingly.
- Reviewing use of 'communal' equipment within protocols will need to be reviewed, e.g. centrifuges or automated analytical apparatuses which are used by multiple team members made need to be physically moved, rostered and decontaminated between users. Some equipment, such as pipettes for liquid handling, or common place engineering tools may need to be assigned to individuals for use rather than being shared across a workspace.
- Reviewing use of PPE in general to establish whether additional items are needed to balance the usual safety protocols with that of the additional infection control requirements associated with Covid-19.
- Road-testing new protocols and interventions described above.
- Staff training and induction for new protocols.
- Absence of face to face business networking: for many staff, especially those with underlying health conditions, attending business meetings, customers interactions, and conferences/networking opportunities, are going to need to be replaced with virtual interactions.

Conclusions

Sharing learning and best practice is going to be key to helping businesses resume activities and increase their R&D activities in 2020 and beyond. To support this sharing, AIRTO will continue to offer webinars and opportunities for members to learn from one another as they seek to review, plan and road-test new working practices. AIRTO will all so seek to identify ways in which government can support the sector.

About AIRTO

AIRTO is the Association of Innovation, Research and Technology Organisations. Its membership comprises approximately sixty of the principal organisations operating in the UK's Innovation, Research and Technology (IRT) sector. The IRT sector has a combined turnover of £6.9Bn, employing over 57,000 scientific and technical staff (equivalent to the academic staffing of the Russell Group of universities) and, for comparison, it is significantly larger than the network of Fraunhofer Institutes in Germany both in size and its scope of activities. The sector contributes £34Bn to UK GDP. AIRTO's members work at the interface between academia and industry, for both private and public sector clients.

Members include independent Research and Technology Organisations, Catapult Centres, Public Sector Research Establishments, National Laboratories and some privately held innovation companies.

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