

Impact of Covid-19 on the Acoustics and Photonics industries in the UK – Autumn 2020 update

Introduction & Background

The Coronavirus Covid-19 global pandemic has resulted in unprecedented challenges for businesses in the UK ever since the first lockdown was initiated in March 2020. A survey of the acoustics and photonics industries in April 2020 was one of the first ‘temperature checks’ of the impact on UK industry and provided valuable input to government with insights into two of our essential cross-cutting enabling technology industries representative of the UK’s border Hi-Tech knowledge intensive economy.

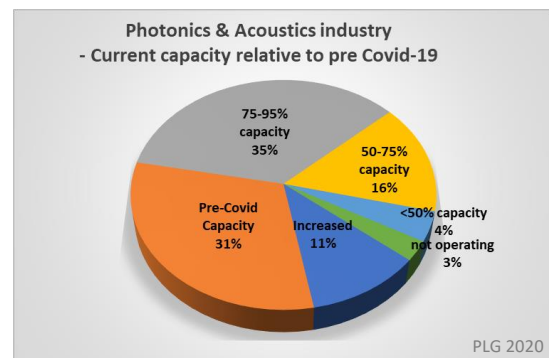
Since March 2020, society has continued to adapt as restrictions first eased and then returned as the second wave took hold in autumn 2020. A second temperature check has therefore been undertaken to capture the ongoing impact of Covid-19 on acoustics and photonics. The second survey was also expanded to also include distinct questions for the academic research community. The survey was opened on 3 September 2020 and closed on 30 October 2020 prior to the second national lockdown. The results of that second survey are presented here.

Business Impact

Industrial Output

Overall 77% of manufacturing and industrial service organisations in the acoustics and photonics industries report that they are operating at, or above, 75% capacity.

The situation is even more positive in photonics, where 16% report operating above pre-Covid levels vs only 4% of acoustics organisations, with 93% of photonics organisations operating over 75% of pre-Covid capacity vs only 52% in acoustics.

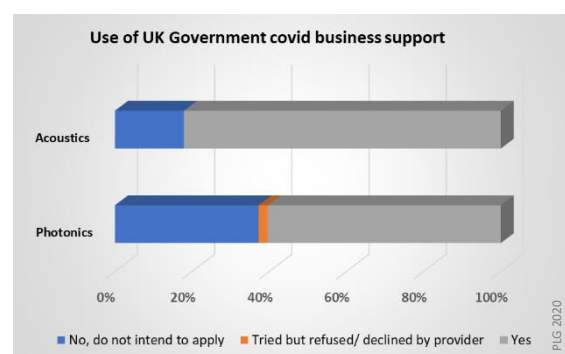


Compared to the spring 2020 survey, the latest results show that capacity has substantially returned to near normal levels, especially in photonics and the industry has continued to adapt from the spring when 85% of manufacturing organisations were still producing goods, but half reported a significant impact on capacity.

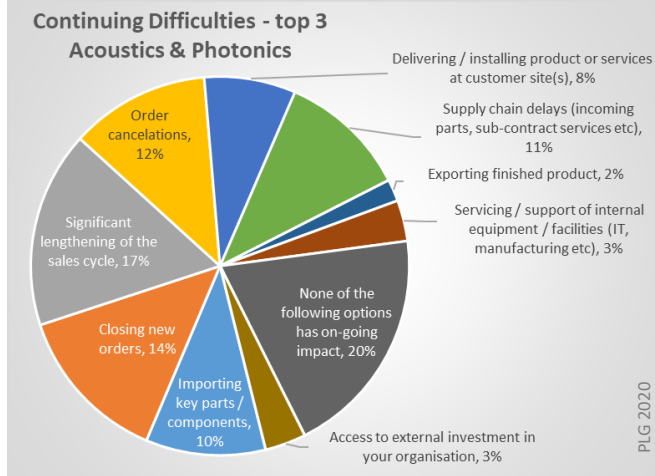
The difference between photonics and acoustics may in part be due to the increased prevalence of non-manufacturing services organisations in the acoustics industry, with ~50% of respondents from such organisations reporting operating at <50% capacity.

Use of Emergency Support Measures

69% of respondents in the autumn survey indicated they have used at least one of the government support measures, hardly changed from the spring. Between the two industries, those in acoustics were more likely (82%) to have used government support vs 60% in photonics. Very few respondents (<2%) indicated they had tried and failed or been declined for support.



Continuing impact



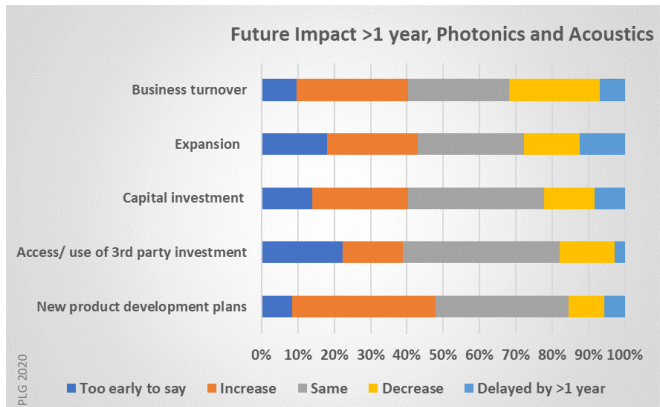
Across photonics and acoustics organisation 20% of respondents indicated none of the major issues identified in the spring continue to be an issue for the business.

Of the continuing challenges for business, those around sales appear to dominate with lengthening of the sales cycle, closing new orders and order cancellations making up around one third of the top concerns. Supply chain disruption including imports and delivery/ installation make up the other significant ongoing challenges to businesses.

Future impact

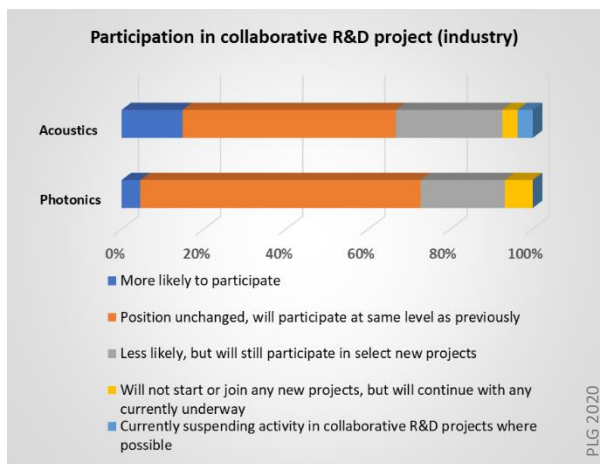
Looking to next year, the continuing uncertainty on how the pandemic will develop is reflected in only a modest reduction in responses indicating it is too early to make predictions about the future (~14% in autumn vs 20% in spring). Uncertainty is, however, more uneven with more respondents having confidence in turnover projections and product development plans.

Fully 86% of photonics and 61% of acoustics companies indicate their product development plans will stay the same or even increase in a years time. This would appear broadly correlated to similar confidence in future revenues with 58% of photonics and 39% of acoustics companies



predicting flat or increasing revenues in a years time. The high number indicating expanding product development hints that many companies are using this period of intense disruption to accelerate their innovation plans.

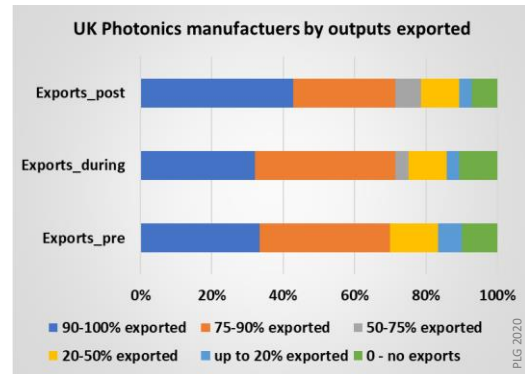
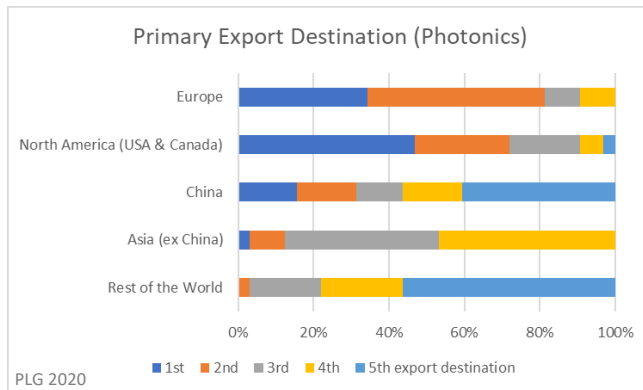
Collaboration is key for advancing innovation and reassuringly only a very small number of respondents indicated they would not join and new collaborative projects and/or stop existing projects. The position of the majority was unchanged, with a notable 15% of those in acoustics indicating they would be more likely to



participate in collaborative R&D.

Export Impact

With borders closed and Brexit looming, many are interested in understanding the impact of Covid-19 on exports. Within photonics the export profile of companies appears to be broadly unaffected by the pandemic. If anything, there is a slight increase in the number of companies who forecast they will export almost all of their output (>90%) post Covid.



Europe and North America were identified as the primary and dominant export destinations for the photonics industry. However, China was a still significant, top 3, destination for almost 50% of UK photonics companies.

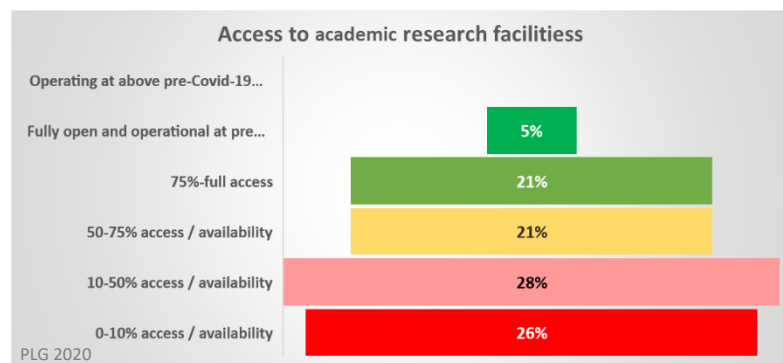
Insufficient data was available from the acoustics industry to make an equivalent comparison.

Research impact

Whilst most of the photonics and acoustics industry has been able to keep its facilities operating throughout the pandemic, most Universities closed their research laboratories at the start of the lockdown in March. The second survey was therefore bifurcated to include questions for academic researchers to understand the ongoing impact on research in acoustics and photonics.

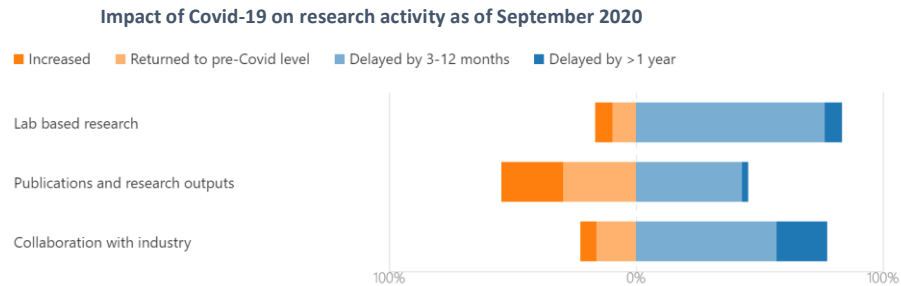
Access to research facilities

Strikingly only one quarter of academic respondents indicated they have 75% or greater access to their research facilities. This is the exact inverse of industry where three quarters of respondents indicated their company was running at this capacity level. Fully 26% of research report having <10% access.



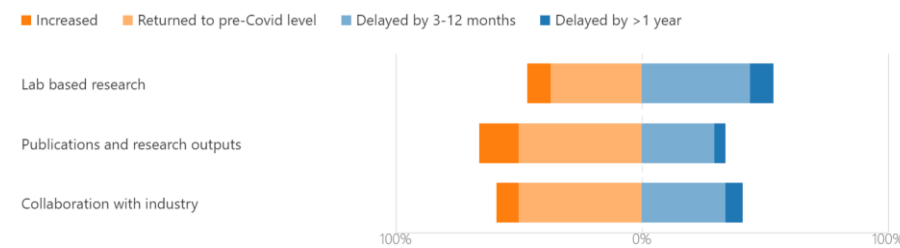
The contrast between academic research and industry shows the impact of fully shutting down facilities and the significant inertia apparent in getting them up and running. However it should be noted there is significant difference between institutions, with some operating at close to industrial capacity levels whilst some are barely operational.

The immediate impact of Covid-19 on acoustic and photonics research has been a delay to lab research and industrial collaboration by 3-12 months in the majority of cases (83%). The impact of publication has been less severe, presumably due to the ability to write-up previous results into publication whilst working from home.



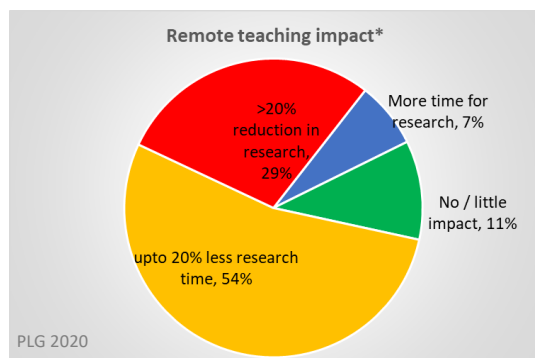
The forward outlook is more positive, but even in a years time 50% of respondents still forecast lab research will continue to be substantially behind where it would have been without the pandemic. With delays persisting in many industrial collaborations.

Forecast impact of Covid-19 on research in 1 year, Sept 2021



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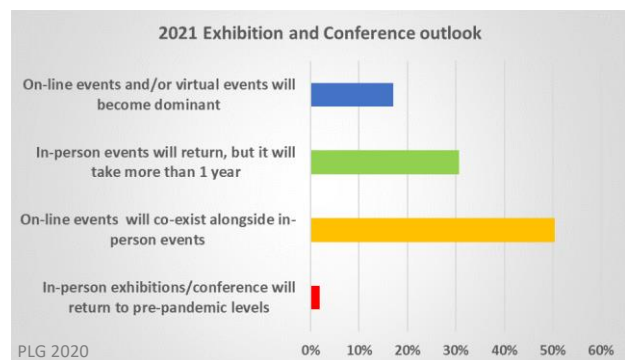


Many university researchers are also deeply engaged in delivering undergraduate and other university teaching. For those with teaching responsibility, a full 83% report adjusting to on-line teaching is having negative impact on their research time, with almost one third indicating it is reducing research time by more than a fifth. This indicates there is more than just laboratory access holding research back as Covid-19 has put additional demand on researchers time. It remains to be seen if this is a temporary adjustment, but the above forecast

of the impact of Covid-19 on lab research, publications and collaborations, indicates Covid-19 may have a more lasting impact on research than industry.

Returning to normal

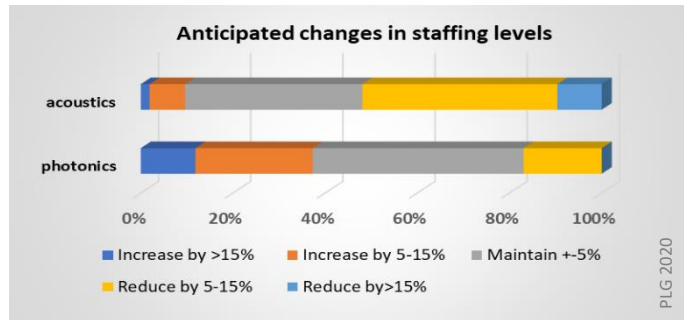
The absence of face-to-face meetings, particularly the large gatherings of scientists at conferences and industry at exhibitions are one of biggest continuing impacts of Covid-19 restrictions. They are also critical for the full functioning of research and industry, providing an efficient pathway for the socialising of the latest developments, career and business opportunities. The greatest value in such events is often cited as the unforeseen interactions and networking, elements that have been very difficult to reproduce in on-line virtual meetings.



Industrial and academic respondents were polled for their view on when large scale in-person events will return. Almost no one predicts such events will return to pre-pandemic levels before October 2021. At best 50% of respondents predict online events will co-exist with in-person events throughout

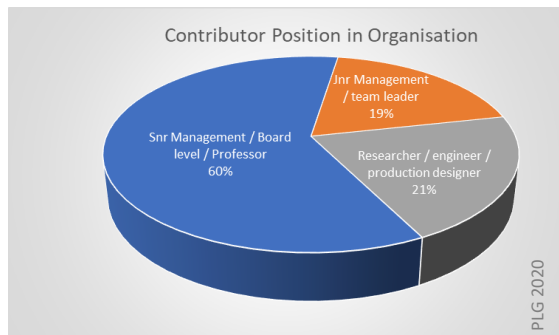
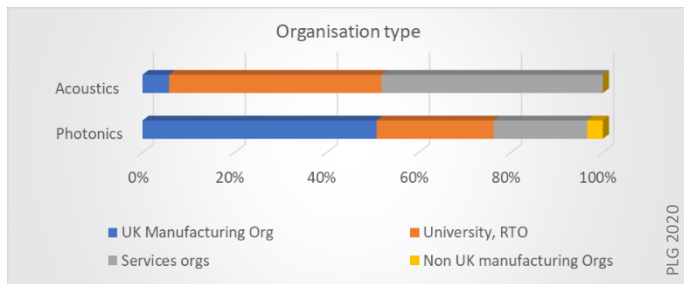
the next year. However, they are highly likely to return eventually as only 17% of respondents indicate virtual meetings will become dominant, perhaps indicating the value respondents still put on in-person time with their peers.

Respondents across all types of organisation were asked for their expectations on how staffing levels in their organisation will be impacted in the coming year. Respondents from acoustics were more pessimistic with 50% anticipating staff reductions of 5% or more. In contrast no photonics respondents forecast staff reductions of >15%, 46% forecast stable staffing levels and 27% increasing staff levels of 5% or more.

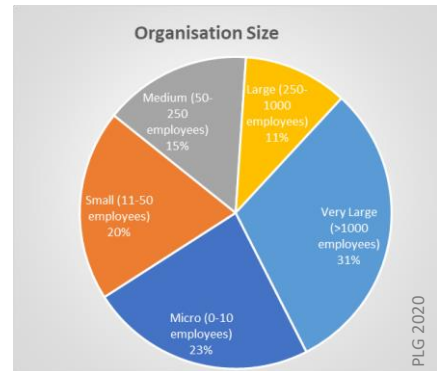


Survey representation and limitations

Survey responses were received from a balanced cross-section of types of organisation, although manufacturing organisation were underrepresented in acoustics. Overall there were 116 responses to the autumn survey compared to 214 for the spring survey, with 45% from acoustics organisation and 52% from photonics (the remainder identifying with application industries)



The majority of respondents were from senior management with this fraction rising to 80% in photonics. Responses came from an almost uniform distribution of organisations sizes, although



the majority of 'very large organisations' were Universities. 68% of responses were from organisations based in England, 23% from Scotland, 7% from Wales and 2% Northern Ireland.

No individual or organisation identifiable information was gathered during the survey to simplify data compliance and keep the survey as short as possible. Therefore it is possible responses include multiple response from the same organisation. However the cross-section of responses indicate this has not introduced significant errors.

Compiled by Dr John Lincoln, Harlin Ltd, in collaboration with the Photonics Leadership Group and the UK Acoustics Network, November 2020.