

# Measurement is a Key Contributor to the UK Economy: Survey Evidence

## About the NMS

Modern industrialised economies rely on a comprehensive measurement system which forms the backbone of free and open trade, supports innovation and encourages the spread of new technology. The Department for Business, Energy, and Industrial Strategy invests around £56million each year on the UK National Measurement System (NMS). The bulk of this funding goes to three laboratories dedicated to world class measurement science that supports the public sector and businesses.



National Engineering Laboratory

The NMS labs survey their customers as part of the NMS evaluation plan, designed to maintain accountability for the public investment and to enable future funding to be allocated based on evidence of what works well. The highlights are...

Businesses supported by the laboratories have an aggregate turnover of **£188Bn**

Businesses supported by the laboratories spend **£10.2Bn** on measurement

**72%** of business users say the laboratories helped them introduce new products and processes

These businesses believe that without the laboratories they would miss out on sales of at least **£539m** annually

A **third** of academics say the impact created by working with the NMS labs could not have occurred without their support

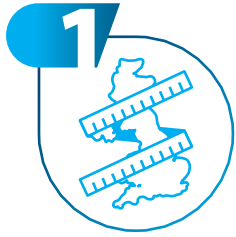
**60%** of healthcare users say the laboratories help them become more efficient by avoiding unnecessary treatments or making treatments cheaper



The NMS labs have an extensive customer base of approximately **6,000 users in the UK**. Most of these users are business organisations operating in the private sector, totalling around **4,500** customers. The remaining **1,500** users are academics and healthcare professionals operating in the public and third sectors.



# Top findings



## The impact of the NMS labs has a large reach and the lab's business customers make an important contribution to the UK's economy

- The businesses who work with or use the NMS labs collectively employ just under one million people in the UK.
- The businesses' sites which engage with the NMS labs collectively have an aggregate turnover of around £188 billion.
- More than a third of these businesses operate within manufacturing industries, and this group accounts for 6-18% of the UK's employment in manufacturing.
- The NMS labs work with around a third of United Kingdom Accreditation Service (UKAS) accredited calibration laboratories in the UK. These commercial labs extend the reach of the labs. The survey found an additional 74,000 organisations were indirectly supported through the provision of calibration services through commercial labs to end users.



## Business organisations who use the NMS laboratories highly value measurement, and they allocate significant resource to it

- Business customers of the NMS labs spend around 5.4% of their turnover on measurement activities - a proportion which is greater than the average company spends on R&D.
- This spending on measurement equates to around £10.2 billion each year by businesses using the NMS laboratories, showing the value of measurement among these customers.



## There are many products that would not exist without the NMS laboratories, and these generate a substantial revenue for customers

- NMS customers are very innovative. Around 80% of the NMS labs' business customers made a change to their products or processes across the four-year period from 2014 to 2017, such as introducing a new or improved product or process.
- 72% of customers created new products and processes as a result of working with the NMS labs.
- 1 in 5 of those who made a change attribute it to the NMS and believe that the change would not have happened without the support they received from the NMS labs.

**£539 million**

Each year, on average, around 370 UK-based businesses who use the NMS labs receive around £539 million in annualised revenue from sales of products that respondents believe would not exist without the support they received from the NMS labs.<sup>†</sup>



In addition to this, a very small number of businesses enjoy exceptionally large revenue increases. Collectively these companies attribute several hundred million pounds to sales of a product that would not have existed without support from the NMS labs.

<sup>†</sup> Annualised data from the 6-years between 2012 and 2017.

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## The NMS labs help academics optimise their research strategy and direction

- The NMS labs have worked with academics from a third of universities in the UK (31%).
- Academics generally interact with the NMS labs through research collaboration and by the co-authoring of articles in peer reviewed journals. Measurement is often key to these users as it is a tool that underpins other areas of scientific research.
- Academics working with scientists at the NMS labs have a high regard for their research in terms of its quality and impact. More than two thirds (68%) of academics said they work with the NMS to better inform their strategy and research direction, showing that the NMS labs create value for their customers by aiding their vision.
- For a third of users (34%), the impact created by working with the NMS labs could not have occurred without their support. These users attribute benefits such as project breakthroughs to the support of the labs, which largely reflects the nature of collaborative R&D whereby solutions are co-created.

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## Measurement is widely used by healthcare professionals for patient safety and to increase efficiency

- Many of the NMS lab's healthcare customers are clinicians and medical physicists who work at NHS hospitals and trusts.
- The labs work with healthcare professionals from nearly half of the teaching hospitals in the UK.
- Surveyed users say measurement is important in the provision of many areas of healthcare, from patient safety to cost savings.
- A substantial proportion (60%) directly use the NMS labs to realise efficiency benefits; either to avoid unnecessary treatments or to make treatment cheaper.
- Customers of the NMS labs gained the following benefits from the collaboration:



60% said working with the NMS labs increased survival of their patients.



The same proportion (61%) reported that the change they made enhanced quality of life for citizens.



More than 4 in 5 (82%) healthcare professionals said the change they made has created better safety and quality of healthcare.



Half said the change has improved recovery for their patients (52%).

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## Customers are highly satisfied with the NMS labs

- Our net promoter scores show our customers are satisfied and loyal, as our score is world class among academics and healthcare users, and excellent among private customers.



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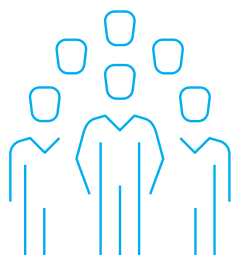
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Academics: 74  
Healthcare: 72  
Private companies: 62  
Calibration laboratories: 59

# The customer survey

Every three years, the NMS commissions a survey of customers who use one or more of these three core labs. In 2018, a sample of the NMS lab's customers from the private sector<sup>1</sup>, academia and healthcare<sup>2</sup> were interviewed\*, to allow the understanding of the labs' reach and better understand users. This survey is part of the NMS evaluation plan, designed to maintain accountability for the public investment and to enable future funding to be allocated based on evidence of what worked well.

We spoke to 15% of the NMS customers, including...



**554**

private users



**183**

academics

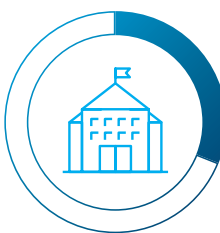


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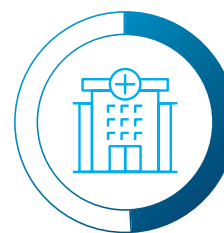
healthcare professionals



**446** respondents were end user businesses, and **88** were from commercial calibration labs which go on to provide services to **74,000** other users.



Academics from **51** universities in the UK were interviewed, from **31%** of the UK's universities



The labs work with healthcare professionals from nearly **half** of the teaching hospitals in the UK

Principally, the funded NMS laboratories develop and disseminate national measurement standards, provide reference materials, and co-ordinate and regulate a range of measurement services that underpin a distributed system for the certification of calibrations delivered by a much larger network of fully commercial calibration laboratories. This means that traceable calibrations are underpinned by national measurement standards, whose benefits then fan-out across the economy through a network of calibration laboratories acting as intermediaries.



You can read the full report at  
[www.npl.co.uk/government-evidence-and-analysis](http://www.npl.co.uk/government-evidence-and-analysis)

\* The survey was run by the independent market research agency Winning Moves.

1. Many of the businesses operate from multiple sites. To better understand the direct impact on businesses, the survey has been conducted at site-level. That is, business customers were asked about activities at their place of work (e.g. a division of large company) rather than for the whole enterprise, about which a respondent might have much less understanding. The site-level approach allows multiple units from a large 'prime' to be surveyed.

Weighting was applied to the sample of respondents from the private sector to adjust for how they were sampled and stratified. To adjust for non-responses, the sample was re-weighted. The estimates have also been grossed up to reflect the populations from which they were drawn.

2. Academics and healthcare professionals responded on a personal level, or on an 'individual-level', expressing their own personal relationship and experience of working with the NMS labs