

Article

UK trade development plan: 2017

This development plan sets out our ambitious, achievable plans to strengthen the reliability and robustness of UK Trade statistics as well as ensuring that they are developed to meet the emerging needs of users, particularly the significant increase in demands and new priorities across a wider user base that we have seen since the UK's referendum on EU membership on 23 June 2016.

Contact:
Adrian Chesson
trade@ons.gov.uk

Release date:
10 February 2017

Next release:
To be announced

Table of contents

1. [Introduction](#)
2. [Progress report](#)
3. [Development priorities](#)
4. [Implementation plans](#)
5. [Development plan engagement](#)

1 . Introduction

1.1 Executive summary

This development plan sets out our ambitious, achievable plans to strengthen the reliability and robustness of UK Trade statistics as well as ensuring that they are developed to meet the emerging needs of users. This is particularly important given the significant increase in demands and new priorities across a wider user base that we have seen since the UK's referendum on EU membership on 23 June 2016.

National Statistics status

UK Trade statistics have not been designated as National Statistics since November 2014 due to a number of issues and errors in published data. We have already:

- strengthened our production processes and systems to prevent a recurrence of errors;
- carried out improvements in response to the UK Statistics Authority's recommendations as well as in response to an independent National Statistics Quality Review;
- responded to all 13 requirements from the UK Statistics Authority Assessment of UK Trade statistics published in May 2015.

Development progress and priorities

Section 2 of this development plan provides an update on progress against our previous development plans as well as the responses to previous consultation. However, we recognize that we need to do more to fully restore user confidence, which includes both an assurance of the reliability and robustness of our statistics and confidence that the range of user needs are being fully met.

Section 3 describes our new and expanded priorities for UK Trade developments to meet users' needs following the UK's vote to leave the EU. There is a strong focus on improvements to quality assurance, transparency and enhanced analytical capability to provide confidence and trust in the UK Trade statistics. These developments will ensure that we are able to provide more detail, faster and with accompanying analytics and commentary to meet users' needs as the UK leaves the EU. The developments also ensure that we establish the user confidence in UK Trade statistics as an important economic aggregate and indicator of behaviour, recognising that it has been catapulted to the forefront of economic and policy debate.

Short term priorities include providing assurance that UK Trade statistics are of high quality and free from error. To this end we are:

- carrying out a thorough review of data, methods and processes from data input through to publication. We expect to complete this by April 2017;
- ensuring that we are quick to respond to requests for data, analysis and briefing, for example in connection with forthcoming official visits from or to other countries. Underlying this is a stronger need for particular dimensions of trade data (sectors, industries, geographic partners, commodities, sub-national trade);
- developing our capacity to analyse and present these dimensions of trade data, adopting a staged approach to improvement.

Since the EU referendum and the changes in the value of sterling, interest in trade prices and the effects on volume has increased. We will continue to produce analysis and commentary to help to understand this effect and we aim to improve the quality of some trade prices data. A range of other improvements are set out in section 3.

Section 4 outlines the main areas of development that we are taking forward to meet the user demands set out in section 3. These improvements span:

- the introduction of new data sources;
- the development of new computer systems;
- the implementation of better processes;
- the enhancement of analytical capability.

The need for more granular data and analysis will be met through better use of existing data (particularly trade in goods) and by increasing the sample size for the International Trade in Services (ITIS) survey as well as improving the sample design to also optimize it on geography, providing better-quality information for individual countries. We are seeking to identify and use new sources of price data and are hopeful that we can make more use of administrative data sources to produce better-quality deflators and possibly to measure some volumes directly.

A full redevelopment of the Trade systems will take place using a phased approach to ensure we reap early benefits whilst designing and building systems that will be faster, more robust, more transparent and more flexible. We expect the first phase will be complete by the end of 2017. However, we have ambitious plans for storing and manipulating the various dimensions of the data (geography, commodity, industry) as well as being more enterprising with the prices data, and so the system development and improvement is likely to be rolled out in further phases over the medium and longer term.

In contrast the development of stronger processes is almost complete and we are currently undergoing a thorough lean six sigma process review, taking on incremental improvements to our monthly cycle but all within the next 6 months. Recognising the increased volume and complexity in the demands for analysis of trade data we are increasing the number of analysts, employing experts in international trade and up-skilling our existing analysts.

1.2 Development priorities summary

The priorities for development are set out in detail in section 3. The table below provides a high level summary of the main developments expected to deliver benefits in the short term (i.e. within 12 months) with an indicative time frame for delivery.

Table 1: UK Trade statistics short term development priorities

Development Plans	Indicative Time Frame
Quality assurance process improvements	Current focus to April 2017 and continuous improvement thereafter
Published data and compilation review and resolution of issues	Spring 2017
National Statistics redesignation submission	Spring 2017
New Trade in Goods and Trade in Services systems - Phase I (enabling faster and more detailed analysis of granular country and commodity data and more transparency for regular production of monthly trade statistics)	End of 2017
International Trade in Services Survey - quarterly survey sample size increase from 1,100 to 2,250	Surveys dispatched - Quarter 1 (Jan to Mar) 2017 Data useable in UK Trade statistics - End of 2017
Improved education related travel data	September 2017

1.3 Context

The UK's referendum on membership of the EU on 23 June 2016 marked a 'step change' in the interest, scrutiny and requirements for high quality UK Trade statistics. We have seen a significant increase in demands and new priorities across a wide user base, including monetary and fiscal policy makers, since the UK's vote to leave the EU. Changes in government departments and an extensive increase in analytical capacity across our users are increasing demands further.

There has never been a more important time for investing in UK trade statistics. Following the result of the EU referendum, the UK faces trade decisions of historic importance. The analytical and evaluation needs for this agenda will be pressing and urgent.

Modelling changes in external tariffs will require historic data on a reliable basis that can be viewed and analysed at many levels of geography and sector as well as by good or service type. The challenges we face are compounded by the complexities of globalization and the modern era of complex, international supply chains built up by the multinational organisations of our time. In addition to the challenges facing traditional goods and services trade, we also face new forms of trade including the digital economy, free trade in data and complex financial services deals where there is no straightforward "fee" to capture value-added.

UK Trade statistics were de-designated as National Statistics by the UK Statistics Authority in November 2014 due to a number of issues and errors in published data. While we have made several improvements to production processes and systems, much more work is planned.

This change in landscape for UK Trade coupled with a need to address compilation issues requires an appropriate and commensurate strategic response. A deeper and wider reaching development strategy is being adopted to modernise, strengthen and extend the data sources, production systems, processes and outputs for UK Trade. This is what is set out in this document.

On the 11 March 2016 we published a UK Trade development plan for consultation. That plan covered the next 3 years and considered a range of priorities covering developments to systems, procedures, analysis and outputs. A broad summary of resource requirements and a timeline were also included in that plan. We have made good progress against many of the priorities. In this document we summarise the responses to the previous plan, which were broadly supportive of the priorities set out at that time. In addition a short summary of progress against the earlier plan is provided, particularly with regard to strengthening quality assurance processes and streamlining production processes.

However, new demands have become clear, so this revised development plan presents a fresh set of priorities in light of the UK's vote to leave the EU.

The highest priority remains the need for high quality and timely statistics, but there are new priorities for granular trade data at commodity and geographic levels of detail, particularly for trade in services, plus a new requirement for industry detail and sub-national aggregates.

The priorities set out here have been determined from user engagement since July 2016, particularly from a wider user workshop held in October 2016. The plans have also been developed through creation of a new Trade project within the Economic Statistics Transformation Programme and the recruitment of new development and operational resources. However, we welcome further comments from users on this development plan. In particular we recognise the increasing number of users outside of Government and would welcome further input from this group. Details of how to comment can be found at the end of this document.

The deliverables from this work are complementary and integral to our wider UK Statistics strategy aimed at producing better statistics to inform better decisions. The ongoing and future developments to UK Trade systems and processes are aimed at delivery of the [Economic Statistics and Analysis Strategy](#). Delivery of the plans will contribute to the programme of transformation of Economic Statistics within the ONS. In so doing we aim to address the UK Trade related requirements of the [Bean Independent review of UK economic statistics](#) and the [National Accounts and Balance of Payments National Statistics Quality Review](#).

NSQRs are an important way of ensuring that National Statistics and other Official Statistics are fit for purpose. That review made a number of recommendations specific to Trade statistics that will be taken forward to strengthen UK Trade.

Also, in March 2016, the Bean independent review of economic recognised that a large proportion of UK economic activity is associated with Trade and recommended exploiting administrative data sources in order to improve the quality of the data. Additionally the review suggested investigating price indices and the link with sterling fluctuations.

While not directly within scope of this development plan, we are engaged in related development work on other data within the balance of payments, in particular foreign direct investment (FDI). This includes continuing with analysis to identify the main trends in these data and using these insights to promote a greater understanding of them. The latest analytical article, "[A review of UK foreign direct investment statistics: winter 2017](#)" was published on 30 January 2017 and the next edition is planned for the summer of 2017. We will also remain an active participant in international working groups on FDI statistics.

UK Trade statistics cover the import and export of goods and services to and from the UK. The UK Trade balance is a main economic indicator for the UK by feeding into both the quarterly National Accounts (NA) and Balance of Payments (BoP).

The conceptual framework is defined in the IMF's Balance of Payments and International Investment Position Manual Version 6 (BPM6) and European System of Accounts Manual (ESA 2010).

The UK Trade monthly bulletin at present contains more detail on Trade in Goods due to the coverage and comprehensiveness of the administrative data sources available. Trade in Goods is also more easily quantified and measured than Trade in Services.

Trade in Services is harder to measure, covering a heterogeneous range of intangible products and activities which are measured through a number of surveys and administrative sources. Data are provided mainly on a quarterly or annual basis which allows monthly estimates to be forecast.

1.4 Scope

The remainder of this development plan contains the following sections:

Section 2 - Progress report

A summary of the responses to the previous consultation and an update on progress against previous development plans.

Section 3 - Development priorities

A description of high level priorities for the development of UK Trade statistics, particularly in light of requirements following the UK's vote to leave the EU.

Section 4 – Implementation plans

A brief outline of how we will achieve the change.

Section 5 – Development plan engagement

Details of how to provide comments about this development plan or UK Trade statistics more generally.

2 . Progress report

2.1 Previous development plan summary

The previous development plans for UK Trade statistics (published 11 March 2016) for consultation were grouped into 3 overarching objectives:

1. To improve the quality assurance of UK Trade data and hence enhance the confidence users can have in the data. This included system developments, scrutiny of data sources, quality checking processes applied by suppliers of the data and the review and improvement of internal quality assurance (QA) practices.
2. To be more curious and challenging about UK Trade data to strengthen the analysis and briefing we provide to users. This included analysis of the underlying volatility in the HMRC Trade in Goods source data to inform the analysis and briefing we provide on the aggregate Trade data and more recently has focussed on explaining the effect of sterling depreciation.
3. To aid delivery of the UK Statistics Strategy to provide better statistics for better decisions. In essence, at a high level, these objectives and priorities have not changed. However, as shown in the next section, the detail within these and the specific focus on different cuts of the data and types of analysis has changed since the EU referendum. Also, the need for new sources of data and different uses of current data, have become important to meet the need for more granular data and analysis.

2.2 Responses to the consultation

Overall, users who responded to the previous development plan were supportive of the priorities. There was universal support that assurance of high-quality and timely statistics was (and remains) the highest priority. Below this, there were some differences. Some users make more use of aggregate UK Trade statistics both in current (nominal) and chain volume measure (real) terms in order to determine high-level macro-economic movements in the economy. Others have a greater need for geographic, sector, industry or commodity level data to analyse specific relationships at a more granular level. Their respective responses were therefore consistent with these needs. However, as many of the development priorities set out previously were aimed at improving the quality of the UK Trade dataset and developing more transparent and efficient systems and processes, it was concluded that the priorities set out in the previous plan were appropriate.

In addition to this, some users emphasised their high regard for the National Statistics status and encouraged priority in re-establishing this status for UK Trade.

The objectives and priorities set out in the earlier plan of March 2016, enhanced by the responses to the consultation were used as the starting point when we reviewed our priorities in light of the EU referendum result.

2.3 Development progress

The previous plan set out the developments in priority order with an indication of the time it would take for delivery into short-, medium- or long-term developments. As a guide, short term referred to developments for which significant progress or delivery was expected within the next 6 months, medium term related to 6 months to 2 years and developments targeted for delivery longer than 2 years hence were considered long term. This section focuses primarily on a summary of progress against the short-term priorities.

2.3.1 Analysis and quality assurance of volatile trade data

Trade data are recognised as volatile, but it was noted by several users that the volatility appeared to be increasing in recent periods. In response, further analysis of the underlying HMRC Trade in Goods data has been carried out to show that the volatility in the aggregate series is representative of the raw HMRC data, and is therefore something we should expect and is supported. Ongoing analysis of these data continues to ascertain if the volatility is increasing and whether it is centred in particular commodities. We will share the results of this analysis through information published in the monthly UK Trade bulletin and at appropriate user groups and forums.

2.3.2 Changes to the Trade in Goods production process

The current Trade in Goods production process has been reviewed and improvements identified with some improvements already taken on into live production. The old process was subject to continuing development in order to meet evolving international standards and user needs. Examples include the reduction in manual intervention by building more processes into the main system and the delivery of aggregates of data to senior managers for quality assurance earlier in the production cycle.

2.3.3 Trade in Services increased frequency and detail

There is a clear need for increased detail and frequency of Trade in Services statistics. We have made some important improvements in this area:

- We have added more commentary for trade in services to our monthly bulletin
- We have published quarterly estimates for exports and imports of services to our main trading partners within the EU; Germany, France and Ireland
- We have published a method and estimates for regional exports of services

In July 2016, ONS published regional-level estimates of Trade in Services for the first time, providing data for the years 2011 to 2014. This has been generally well received by users. Further development work is currently underway, including the release of 2015 data intended for publication in Summer 2017. Development has also been carried out by colleagues at HM Revenue and Customs who, in December 2016, amended their methodology and released new statistics on Trade in Goods at a regional level.

2.3.4 International Passenger Survey (IPS) sample review

An IPS Sample review has been undertaken in 2016, with the aim of minimising total costs while achieving current levels of precision of a specified set of annual estimates. The review covered both migration and travel and tourism datasets, with new methods put in place by quarter four of 2016. This has resulted in a financial saving to the travel and tourism dataset, with an estimated increase in sampling errors of no more than 15% for any of the key breakdowns of visitors or expenditure. Sampling errors for some travel and tourism estimates may be slightly reduced. The optimised sample slightly improved the precision of international migration estimates.

2.3.5 Review of assurance around UK Trade statistics – UK Statistics Authority Toolkit

The Authority published regulatory standards confirming the quality assurance (QA) arrangements required for statistics compiled using administrative data in January 2015. These standards ensure compliance with the [Code of Practice for Official Statistics](#) and are accompanied by the Administrative Data Quality Assurance Toolkit.

We have reviewed UK Trade quality assurance processes in line with the Toolkit. This process is a substantial and fundamental scrutiny of the quality assurance of source data and our data collection and compilation procedures. The results of which will strengthen the quality of UK Trade data.

Initial assurance levels have been assigned for each administrative data source feeding into both Trade in Goods and Trade in Services using the QA matrix from the toolkit. We have met with all data suppliers to better understand the context of the data and collection methods as well as the quality assurance processes they have in place. We have also taken this opportunity to communicate how we use their data.

Ensuring the data are the most appropriate and reviewing the quality assurance processes both those of data suppliers and within ONS is of paramount importance in ensuring that users can have trust in the data they are using. It should assure both ONS and users of Trade statistics that appropriate levels of checking and analysis have been applied to the data used in compiling our statistics.

The [associated report](#) from this work has also been published today (10 Feb 2017)

2.3.6 Systematise the mapping of country data

Until recently the quarterly delivery of country data to the Balance of Payments (BoP) team was completed using Excel spreadsheets, rather than within the main integrated processing system. This process has moved to the integrated system in order to streamline the process and improve the ability of the BoP team to view the underlying data. There are no changes to the data which are published (as the correct method is applied); this development has streamlined the process of producing the data allowing further time for quality assurance.

2.3.7 Quality assurance and maintenance of Missing Trader Intra-Community VAT Fraud Adjustments

There is a high user demand to ensure the quality of historic adjustments related to Missing Trader Intra-Community (MTIC) VAT Fraud. We have further quality assured these series and ensured that the volume series are maintained as the last base year for annual chain-linked volume series is updated in line with the National Accounts policy for updating reference and last base years.

2.3.8 Enhancements to the statistical bulletin

A focused project of enhancing the monthly Trade statistical bulletin has been carried out in response to suggested improvements made by the Authority. This project will continue, in response to enhancing data availability, user engagement and regular monitoring of the bulletin content. While these developments will continue, for information, some of the enhancements already delivered are listed below:

- clearer distinction and focus for the monthly change and 3-monthly change comparisons, including associated changes to the embedded tables
- introduction of more detailed revisions information, where relevant
- introduction of a longer-term perspective analysis for users, including topics such as country comparison with other G7 countries, sterling depreciation and trade, and UK trade with the EU
- introduction of a total trade series excluding erratics, to provide users a better guide to the emerging trade picture

Providing a clearer and easier to navigate bulletin is crucial in delivering data in a format which aids the user experience. Introducing greater analysis and information aims to meet needs which have been identified as part of internal review and user engagement. The bulletin will continue to evolve to ensure that it continues to meet the changing needs of users.

In January 2017 ONS moved to publication Theme days; trade being part of the short term economic indicators alongside construction and the index of production. ONS now produces an overarching commentary covering these measures and their impact on the economy.

2.3.9 UK Statistics Authority Assessment response

We have responded to all 13 requirements from the [UK Statistics Authority Assessment of UK Trade statistics](#) published May 2015. It is our aim to continue to assure ourselves and users of the quality of UK Trade statistics through the steps outlined later in this plan. Once we are confident in the high quality of these data we will request the Authority to reconsider whether UK Trade statistics can be redesignated as National Statistics. We plan to do this in the spring of 2017.

3 . Development priorities

The priorities for UK Trade developments described in this section reflect users needs following the UK's vote to leave the EU. There is a strong focus on improvements to quality assurance, transparency and enhanced analytical capability to provide confidence and trust in UK Trade statistics to address earlier issues and regain National Statistics status.

UK Trade is an important economic aggregate and indicator of economic growth and behaviour which has been catapulted right to the forefront of economic and policy debate. The need for more detail, faster and with accompanying analytics and commentary will undoubtedly grow as the UK leaves the EU. Therefore the production of official statistics must develop to meet this need. Consequently, the provision of more detailed country analysis is a priority for us in order to provide the data necessary for informed trade negotiations. Similar to the previous plan, we expect the developments to provide benefits against 3 overarching objectives:

1. To improve the quality assurance of UK Trade data and hence enhance the confidence users can have in the data
2. To be more curious and challenging about UK Trade data to strengthen the analysis and briefing we provide to users, but additionally to design, build and implement new systems and processes using new data where possible to enable more granular analysis
3. To aid delivery of the UK Statistics Strategy to provide better statistics for better decisions

The developments have been ordered with those currently considered to be higher priority listed first. However, it should be noted that some of the developments require more substantial work and are planned for delivery in the longer-term. As such, some developments such as delivery of Trade data for the production of Supply and Use Tables in Previous Year's Prices will be worked on in parallel with other shorter-term developments such as improvements to quality assurance processes and more analysis by country.

Slightly different from the previous plan, as a guide, short-term refers to developments for which significant progress or delivery is expected within 12 months, medium-term relates to 12 months to 2 years and developments targeted for delivery longer than 2 years hence are considered long-term. However, where we have a more specific target date or period for completion this has been stated.

In short, our priority focus in the short-term continues to be on quality assurance of the data and on streamlining and improving the transparency of our production systems. Improvements to systems will facilitate faster and more granular analysis, but use of new sources of data will also be crucial to this objective. In the short-term we will also improve the analysis we provide by trading partner country (for both goods and services) to increase the evidence base available for trade negotiations and impact analysis.

While we will strive to make better use of existing data to provide more geographic and product detail in the short-term, the expansion of our source data and greater linking of trade datasets in order to provide analysis across different dimensions such as industry, will take longer. Used in combination with other information this should aid policy makers to measure and monitor the impact on businesses in different sectors of the economy. In the longer-term our priority is delivery of wider National Accounts strategic requirements.

Using evidence from our user workshop, user group meetings and bilateral discussions the priorities for UK Trade statistics from a user perspective are as follows.

3.1 Quality and timeliness (Short-term)

All users we spoke to agreed that the highest priority is to have confidence and assurance that UK trade statistics in aggregate are of high quality, without error. Many users also emphasised the importance to them that the regular trade outputs (the monthly bulletin with accompanying time series, estimates within GDP and the Pink Book) continue to be provided on a timely basis. Crucial to this will be improvements to our process, particularly quality assurance processes. We have already made good progress in this area. Further details of what we have done can be found in section 2 and more on what we will be doing is covered in section 4. However, to tie this together, this section provides a short summary of the key aspects.

3.1.1 Quality Assurance Checks (Short-term)

- We have introduced a number of extra quality checks and tools into our monthly production round. These include comparisons of HMRC data movements and BoP adjusted aggregates, parallel running of seasonal adjustment methods using Python, and the production of charts to help build curiosity of our data against other published sources (e.g. implied deflators against ONS price indices). We are now introducing these tools into the quarterly production round for our deliveries to GDP and BoP
- We have reviewed the quality assurance practices of our data suppliers to ensure these are robust and meet with our high quality standards (for more information please refer to our [published QAAD](#))
- By spring 2017 we will have reviewed every series published for UK trade, as well as the methodology and documentation of each processing stage. This will provide us, and our users, with assurance that the published data are error free, and improvements to methods or systems are identified for development. We will also ensure robust quality assurance processes and instructions are in place and fully documented, with adequate capability in the UK Trade production team to carry out these checks. This will be achieved by continued recruitment of analytical staff into the team, and via suitable handover and training from economists currently supporting the processing

Due to the large number of series published for UK Trade, which is likely to increase, we are also initiating a rolling programme of analysis to continue this in depth review of published series, on top of the quality assurance built in to the production process.

3.1.2 Improve user engagement (Continuous improvement)

User engagement is essential for us to understand and meet our user needs. Enhancements to our user engagements is a continuous process and as such should not be considered with a short, medium or long-term timeline as with other developments.

Our current methods of user engagement include (not exhaustively):

- regular dialogue with key users through the quarterly Balance of Payments User Group
- the ONS Economic Forum
- user engagement surveys (via survey monkey) to allow users the opportunity to provide feedback on the monthly and quarterly Trade publications
- UK Trade user workshops and analytical meetings

Further information and links to methods of user engagement are available on the [UK Trade Users and Usage](#) section of the Trade web page.

As outlined above, improvements in this area will help inform where changes are needed in order to meet evolving user needs.

3.1.3 Comparison with external indicators (Short-term)

ONS routinely compares latest trade movements with external indications (such as CIPS/Markit and Agent's scores from the Bank of England) and draws on international comparisons. We plan to do more in-depth analysis of the reasons for differences between ONS data and these external indicators with a view to providing more insight and to reveal potential improvements or to enhance the quality assurance of UK Trade data. ONS is considering how best to share this information with users and views are welcome.

3.2 Pace of response (Short-term)

Distinguished from timeliness, this priority revolves around a need, which has significantly heightened for some departments since the EU referendum result, for rapid response to briefing requests from ministers. Delivery of this for ONS partly requires the provision of information and training for the analysts across other departments so that they know what is already available. Also, it will be important to establish mechanisms to get country specific analytical requirements sufficiently in advance. We already have regular engagements with other departments, but are looking at new ways to get forward looking mechanisms in place and new ways to present existing information in a way that will be most useful to the users. We have a monthly UK Trade bulletin which is a good vehicle for providing timely data, commentary and analysis. We will look to enhance this further with additional articles and analyses.

3.3 Granular statistics and analysis (Short to Medium-term)

The importance of particular dimensions of trade data (sectors, industries, geographic partners, commodities, sub-national trade) varies between users depending on the need. However, the demand for detail, both for goods and services, cut by different dimensions is a clear priority spanning most users. The need for high quality data on trade between the UK and other countries will be important when investigating new trade deals and relationships. Breaking these data down into the products and sectors of the UK economy engaged in the trade will provide further valuable information.

It is important to note that HMRC already publish detailed geography and product data for trade in goods on a monthly overseas trade statistics (OTS) basis via interactive data tables on uktradeinfo. We plan to build on these data to provide granular trade data for goods and services on a consistent national accounts (ESA 2010) and balance of payments (BPM6) basis.

Currently, the majority of UK Trade in goods data received by ONS comes from HMRC. These data are provided in separate datasets for the EU and the Rest of the World, and within these datasets the data is provided separately by geography and product. These data are also provided by geography and product in a combined dataset, but we do not currently process the data this way. We are developing systems that will combine all these low level aggregate data from HMRC into a single base dataset for trade in goods. This base dataset will be built and tested in the short-term to enable analysis at a granular level. This analysis may be experimental until the full system and processes are complete, but this should provide users with some early insight and valuable country by product analysis before the end of 2017.

Multiple data sources at different levels of detail are used to compile Trade in Services estimates. Therefore, a further priority for development is a new UK Trade in Services system that will enable the compilation of outputs across multiple dimensions in a transparent way that enables scrutiny and analysis. Equally, increases in sample size and improvements to our sample design for the International Trade in Services Survey will enable us to improve our analysis and commentary across the geographic and product dimensions (more detail is provided in the next section). In parallel with the development of a new trade in goods system, we are currently designing the new trade in services system. We expect to have built and tested both systems by the end of 2017, but we are striving to make use of developments incrementally during this period. Therefore, we will aim to provide some experimental analysis and insight based on the new datasets being developed prior to full implementation into the National Accounts and Balance of Payments which is planned for 2018.

We recognise that industry detail is important to our users. We are investigating what data on industry is currently available or could be linked with existing trade data. While we will strive to make use of all available data and to provide analysis and insight in the short-term (most likely in the form of experimental data and analysis), it is unlikely that we will be in a position to produce trade data by industry within the regular trade outputs until the medium to longterm.

We intend to continue development work on regional-level estimates of Trade in Services, and will be working closely with HMRC to further align the methodologies and comparability of regional Trade statistics.

3.3.1 Split of imports and exports by area (Short-term)

Currently imports and exports are published quarterly; split by EU, Non-EU, Euro Area, Non-Euro Area and Non-EU on a current price basis for goods and services combined.

This breakdown will also be provided on a Chain Volume Measure (CVM) and Previous Year's Prices (PYP) basis earlier, alongside the second estimate of GDP, rather than alongside the Balance of Payments one month later. The ONS will publish these estimates from February 2017.

3.3.2 Education-related travel (Short-term)

The current figure for Education-Related Travel is derived from the International Passenger Survey (IPS). IPS is a continuous survey conducted at major ports of entry to, or exit from the UK.

Work has been undertaken for Blue Book 2017 to improve the accuracy of these estimates by obtaining data for higher education tuition from the Higher Education Statistics Agency. The new data will be included in published trade data in the quarterly national accounts and balance of payments in September 2017.

3.3.3 Trade in Services increased frequency and detail (Medium-term)

It is recognised that Trade in Goods data is very detailed and timely. Trade in Services data is less detailed and timely. This is not a weakness specific to ONS, but is a recognised phenomenon due to the difficulty of measuring the transfer of services, compared with goods. However, the importance of Trade in Services to the UK economy is well documented. Indeed the Bean Review and other stakeholders have acknowledged the challenges and importance of measuring Trade in Services. This has been particularly clear following the EU referendum where the need for more granular detail for services has increased considerably.

Improvements in this area are underway. Prioritisation of work has been led by user need and policy requirements. We are committed to undertaking work in several areas:

- expanding the product detail published for Trade in Services by exploiting the increased International Trade in Services Survey sample (see section 4.1,1)
- publishing international comparisons of Trade in Services estimates
- obtaining information on how other countries, specifically Germany, Netherlands, USA and Japan compile Trade in Services statistics
- investigating the possible provision of revisions analysis and confidence intervals associated with the Trade in Services estimates

In addition we have been in dialogue with HMRC to potentially incorporate data from two of its VAT forms within official statistics on Trade in Services: these are the EC Sales List which is a timely record of services traded with the EU; and the new information on cross border e-commerce which came in at the beginning of 2015. We are currently analysing some aggregate EC sales data from one year with a view to using these data to quality assure our Trade in Services exports estimates in the short-term. Longer-term benefits from these two data sources are not clear at this stage as we need to establish to what extent the data will be available as the UK leaves the EU.

This will continue the long-term aim of improving the coverage of Trade in Services statistics, which will directly benefit the user in providing statistics that are higher quality and provide more coverage.

3.3.4 Sector or Industry detail (Medium to long-term)

ONS acknowledges that many users require specific analysis or explanation of movements in trade, in particular sectors or industries.

ONS staff are engaged in Eurostat Task Forces, for example developing Trade in Services by Enterprise Characteristics (STEC). STEC is an initiative to produce Trade in Services by industry and other business characteristics such as employment. We know that this information would be helpful for wider users, therefore as well delivering tables to Eurostat, ONS will publish analysis in this area at the earliest opportunity.

Details about the industries engaged in trade are a high priority requirement for our customers. At present, industry data is not collected directly from UK firms involved in external trade. Merchandise trade data in goods is sourced largely from HMRC's custom and excise surveys. Development in this area, to map or link an industrial dimension onto current trade data and investigation of possible new data sources is a key area of focus in our plans. However, it should be noted that it is not straightforward to develop this industry dimension for UK Trade so it will therefore not be something that can be delivered until the medium to long term.

3.4 Mode of Supply (Medium-term)

Relevant for trade in services is the mode through which the services, once traded, are supplied. Some services require the temporary movement of people across borders to provide the service that has been traded (Mode of Supply 4) or a commercial presence to be established (Mode of Supply 3). Given the significance of freedom of movement in the debate around the UK's vote to leave the EU and what this means in practice, this movement of people associated with the mode of supply of trade in services has moved up the list of priorities. We already have some data which can be used to approximate mode of supply. Development work on processes and systems will factor in the requirement to provide better outputs on mode of supply for trade in services.

3.5 Price effects (Medium-term)

UK Trade data has been produced in both current (nominal) prices and chained volume measures (real terms) for a long time. Both measures feed directly into the National Accounts. Until recently, more focus has been given to the headline current price estimate in the monthly UK Trade statistical bulletin. Since the EU referendum and the changes in the value of sterling, interest in trade prices and the effects on volume measures has increased. We have introduced additional commentary into our bulletins to help users understand the possible effects of sterling depreciation on trade. We will continue to analyse this area and provide commentary which will be enhanced further by our introduction of theme days.

We are working with colleagues to identify new sources of price data (particular for services prices) and new ways to use existing data.

There is a review of trade prices being undertaken by the Prices division in ONS. The Export Price Index (EPI) and Import Price Index (IPI) survey samples will be increased from June 2017, which will improve the quality of the trade prices of manufactured goods. We will also investigate the use of value and volume data collected and published by HMRC for all commodities, to derive prices, or directly produce a volume measure for trade in goods. Discovery analysis on this will be published and shared with users during the next 12 months.

A new deflation strategy has been identified as a main strategic initiative in the NA work plan. UK Trade prices are an important element of the deflation strategy, particularly the need to measure more services prices. As such the trade team at ONS are working closely with colleagues developing the strategy to ensure the appropriate weight and representation is given to trade.

3.6 Improve data on international transactions (Medium to Long-term)

The NA NSQR recommended that opportunities continue to be sought to improve the data available on the myriad of evolving international transactions and that in particular data on international processes continues to be improved.

The work we have prioritised in this area is likely to provide:

- improved data on the concept of Trade in Value Added (a set of statistics to complement those on gross trade flows currently well established)
- the causes of bi-lateral trade asymmetries between particular countries

We have been working with the Department of International Trade (and formerly the Trade team within BIS) and the University of Sussex to link data (both from ONS and HMRC) in order to analyse the potential extent to which Trade in Value Added is a factor within Gross Trade flows.

Additionally, trade asymmetries exist across global trade statistics whereby, for example, the exports recorded by country A to country B do not match the imports recorded by country B from country A. There are multiple reasons such as measurement differences, conceptual differences and different data sources. We have conducted some analysis of the UK's trade asymmetries, engaged in bilateral meetings with other National Statistical Institutes (NSIs) to understand some of the potential reasons for differences and we are working with an academic to develop possible models that might lead to improvements. We are also engaged with the OECD Working Party on Trade in Goods and Services and associated groups on improving trade statistics. This will be an area of ongoing focus within our development plan. By collaborating with other NSIs we aim to explain, and where possible, reduce asymmetries in the short-term, while also developing improved methods and systems to implement in the medium-term.

3.7 Wider Strategic Developments

3.7.1 Supply Use tables at previous year's prices (SUT PYP) (Medium to Long-term)

A long-term aim for the UK's NA has been to develop annual volume based balanced supply and use tables. This is considered international good practice and is supported by the NSQR as well as being a requirement under ESA 2010. We aim to have developed these tables into the production process to support Blue Book 2018. As part of the work to introduce SUT PYP, NA are also reviewing the process for aligning Gross Domestic Product (Output) (GDP(O)) with annual expenditure. In particular, to consider how to align all industries with the annual balance to more accurately reflect the expanded services industries within the process. This is to better reflect the position of this sector within the UK economy as recommended by the NSQR.

We are designing our new systems so that they will be compatible with this development.

4 . Implementation plans

This section outlines the key areas of development required in order to meet the user demands set out in the previous section. These are:

- Data Sources
- Systems
- Processes
- Analytical capability

Development of UK Trade statistics is a high priority within the Economic Statistics Transformation Programme. As such it is a distinct development project with analytical and development resources devoted to the improvements. Alongside this the operational team is integral to the success of the developments and is being enhanced with more resources and capability to enable these developments to happen.

4.1 Data Sources

The need for more granular data and analysis of UK Trade e.g. by commodity and geographic area can be facilitated through better use of existing data, particularly trade in goods data from HMRC. This data is already available from HMRC on an Overseas Trade Statistics (OTS) basis, but in as part of the first phase of our development, we aim to produce exports and imports of commodity by country values on a Balance of Payments (BoP) basis. However, we do not currently have trade data by industry. In addition, while we use a number of sources for trade in services, we have less coverage for services data. Therefore, an important part of our development work is to optimise the use of current data, to seek out new sources of data and to link different datasets together such as trade data with our business register to determine the industry dimension. This work will require significant investment in new platforms to store the data, possibly new agreements to gain access to data and new systems and analytical capability to extract the information from these new data.

4.1.1 International Trade in Services (ITIS)

The International Trade in Services (ITIS) survey is conducted by ONS. There is a quarterly and annual survey. We are making changes to this survey that will result in improvements to the quality of the source data for Trade in Services. ITIS is the largest source of data for Trade in Services. It is the sole data source for the following accounts:

- personal, cultural and recreational
- telecommunications, computer and information
- construction
- intellectual property

and covers part of the Other Business services account.

The sample size for the quarterly survey is being increase from 1,100 to 2,250 from Quarter 1 (Jan to Mar) 2017. Also, the sample design is being optimised to sample based on geography (i.e. the destination/source of the export/import) so that better quality aggregates and analysis by geography can be achieved. The annual survey will also be reviewed and optimised in spring 2017. The sample improvements will allow us to publish more detailed breakdowns of trade in service (by service type) for all countries.

4.2 Systems

Due to the evolving nature of recording international trade, changes and improvements are regularly made to the UK Trade systems. The iterative nature of these developments has resulted in systems that are cumbersome to run and make interpretation and analysis of the data more difficult. This problem, combined with the need to provide faster responses to trade questions using more granular data necessitates the need to develop new systems for both Trade in Goods and Trade in Services.

The new systems will be more transparent so there is a clear line of site from source data to aggregate outputs. They will be easier to use and interpret. The new systems will be faster to run thus allowing more time for quality assurance of the outputs and enable the team to better meet the demand for analysis and insight from users.

We are currently designing the new systems. Our aim is to complete the design and begin the iterative build of the systems in the coming months. As detailed earlier, we will strive to take the benefits from the new systems incrementally. For example, once the base datasets are constructed with greater detail and transparency than our current systems, we will produce experimental analysis from these data where possible. Our aim is to complete the build of both the trade in goods and trade in services systems in 2017 with use in the production of the monthly UK Trade Bulletin a priority. Further development and full implementation into the National Accounts and Balance of Payments is currently planned for 2018.

4.2.1 Re-evaluate the pre-processing of HMRC transmitted data

The current method of transferring HMRC raw data to an understandable format for quality assurance and onward processing is very time-consuming, both when received and if any amendments are provided by HMRC. As detailed earlier, we have already developed a parallel system in Python which we use to quality assure these data at an earlier stage in the process. However, we are reviewing the whole way we receive and process these data so that the process can be sped up and to facilitate improved quality assurance at an earlier stage in the current short 10 day monthly production window. We aim to complete the improvement to this part of the process within the new system development and feel the benefit before the end of 2017.

4.3 Processes

As detailed elsewhere in this plan, we have already introduced several new quality assurance procedures, including the development of a new Python system to parallel process the HMRC Trade in Goods data which enables us to quality assure the raw inputs to the main system much faster. We have also introduced additional checks on price indices and implied deflators. We are now undergoing a thorough lean six sigma process review with an emphasis on quality assurance, taking on incremental improvements to our monthly cycle. There is a particular emphasis on reduction of manual processes, to automate the quality assurance of regular data identities. This will allow more time for scrutiny of the movements in the data and production of informative analysis and commentary. Benefits of this kind are already being introduced into the regular production cycle and will continue on an incremental basis, particularly through 2017, but beyond this as new systems come on line.

4.4 Analytical Capability

Development of new systems, improvements to processes and advances in terms of data sources are fundamental to our development plan. We are also building up our analytical capability to meet the increased demand for high quality trade data and analysis.

We have recently recruited additional trade expertise and expanded both the operational and development teams. In addition, as outlined earlier, we are working in collaboration with international experts through task forces and working groups. We are also working with analysts in other departments to make sure we understand the full extent of available data and stay in tune with the demands and priorities. In addition, we continually seek secondment opportunities to share knowledge and experience.

We also have partnerships with academic institutes to benefit from a wider pool of knowledge and expertise in areas such as TiVA and the assessment of trade asymmetries. We continue to shape our development plans in a range of areas and are working with the new Economic Centre of Excellence and Economic Statistics Working Group to engage with experts in trade.

5 . Development plan engagement

This work plan has been published to give users a greater understanding of the planned development work associated with UK Trade statistics. The work has been prioritised in line with the economic statistics transformation plans and known user needs.

We welcome all communication from users both in terms of this development work plan and more widely in relation to the UK Trade publication and outputs.

If you would like to provide comments you can submit them by email or post. Contact details are provided below.

Email: trade@ons.gsi.gov.uk

Postal address: Hannah Finselbach
UK Trade and Transfers
Office for National Statistics - Room 1.201
Government Buildings
Cardiff Road
Newport
NP10 8XG

Further details on communication methods can be found on the [UK Trade Users and Usage](#) section of the ONS website.

Thank you.