Dynamic surveying for aviation
Supporting evidence based policy making

Context for aviation evidence

Government and associated bodies

Civil Aviation Authority
UK airport statistics departing passenger survey punctuality and delays, safety consumer surveys

Office for National Statistics
international passenger survey (overseas travel visits and expenditure)

HM Revenue & Customs
value and tonnage of goods traded by mode

Home Office
number of arrivals at ports, queuing times

Industry organisations

IATA

AOA THE VOICE OF UK AIRPORTS

NATS

ACL

International organisations

ICAO

Commercial data suppliers

FlightGlobal Pioneering Aviation Insight

OAG connecting the world of travel

…but there are still substantial gaps in the *evidence base* *for aviation in certain topic areas*

"a new strategy to support industry in delivering even greater improvements for passengers, the environment and our country"

…a lot of the questions being asked either stemmed around

- *getting a gauge of the scale of the issues*
- *understanding the drivers of behaviour and consumer choice*

to ultimately support strategic and policy developments

Build a global and connected Britain

▸ Business passengers

- how often to business passengers make trips?
- what kind of activities to they conduct on their trips?
- how important is air travel to business passengers?

Help the industry work for its consumers

▸ Foreign residents and surface access

- how do foreign residents research modes of travel to get to their destination in the UK?
- it what stage to they conduct this research?
- is the information already provided satisfactory?
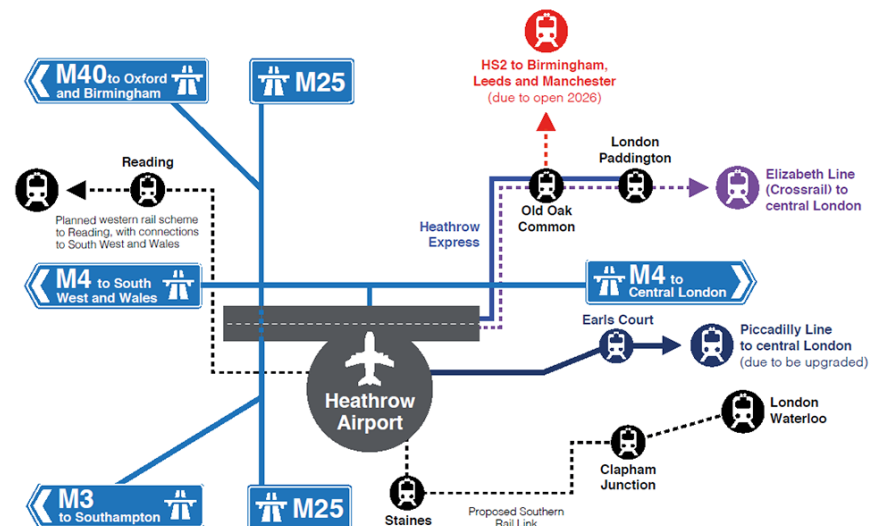
1. Does the data already exist?

- Already established that this was an evidence gap, not feasible

2. Start a new data collection

- Suitable, but potentially costly and timely + process heavy (procurement etc.)

3. Adapt an existing data collection process
→ **CAA Departing Passenger Survey**

- Ideal, but how? **By being dynamic**

What is the departing passenger survey?

▶ The **CAA Departing Passenger Survey** offers valuable insights into the people using UK airports, **with interviews taking place in the departure gaterooms** at a selection of UK airports.

▶ Surveys usually run on an annual basis, with shifts spread as evenly as practical throughout the year. Where possible **all routes, and in most cases all flight numbers, are covered regularly**.

▶ The main survey includes questions on journey purpose, final and intermediate surface origins/destinations, means of transport to and from airports, route flown, country of residence and income.

▶ The survey is a **rich data source** and has been used consistently over the years to provide information about air travellers and associated trends.

▶ Key benefits of this survey:
   1. unique in being able of **capture both UK and overseas residents**
   2. reaches a representative population of **people that are actually flying**

…okay so how do you adapt this existing survey to address the evidence gaps identified

Improved technological processes really helps

▶ Recent innovations in the way the survey is delivered – most notably, the **introduction of tablets replacing paper based forms** – means that the underlying survey can now be adapted to meet many different customer needs.

Computer-assisted personal interviewing (CAPI)

- **What questions do we want to add on?**

CAPI provides the flexibility to **add-on** any number of questions (*within reason*) with speed

- **Who do we want to ask them to?**

program simple or complex **rules to target specific passengers** for the questions being posed

- **Where do we want to ask them?**

historical survey returns allow us to easily assess airports more suitable and sample sizes that are realistically achievable

Benefits of the dynamic offering

▶ The departing passenger survey is unique in being able of **capture both UK and overseas residents**, a service which most other standard surveys providers struggle to accommodate.

▶ Interviews are conducted at a range of the largest UK airports and so reaches a representative population of **people that are actually flying**.

▶ The CAA are able to program simple or complex **rules to target specific passengers** for the questions being posed. For example

- Simple: all foreign residents
- Complex: all foreign residents travelling for leisure purposes between the UK and Europe

▶ Tablet data collection allows the survey questions to be tweaked and altered whilst in the field to allow optimal performance (changes can be implemented within one day).

▶ Improvements in data processing and dissemination allow **responses to be shared almost immediately** with automated analysis tools providing instantaneous provisional results.

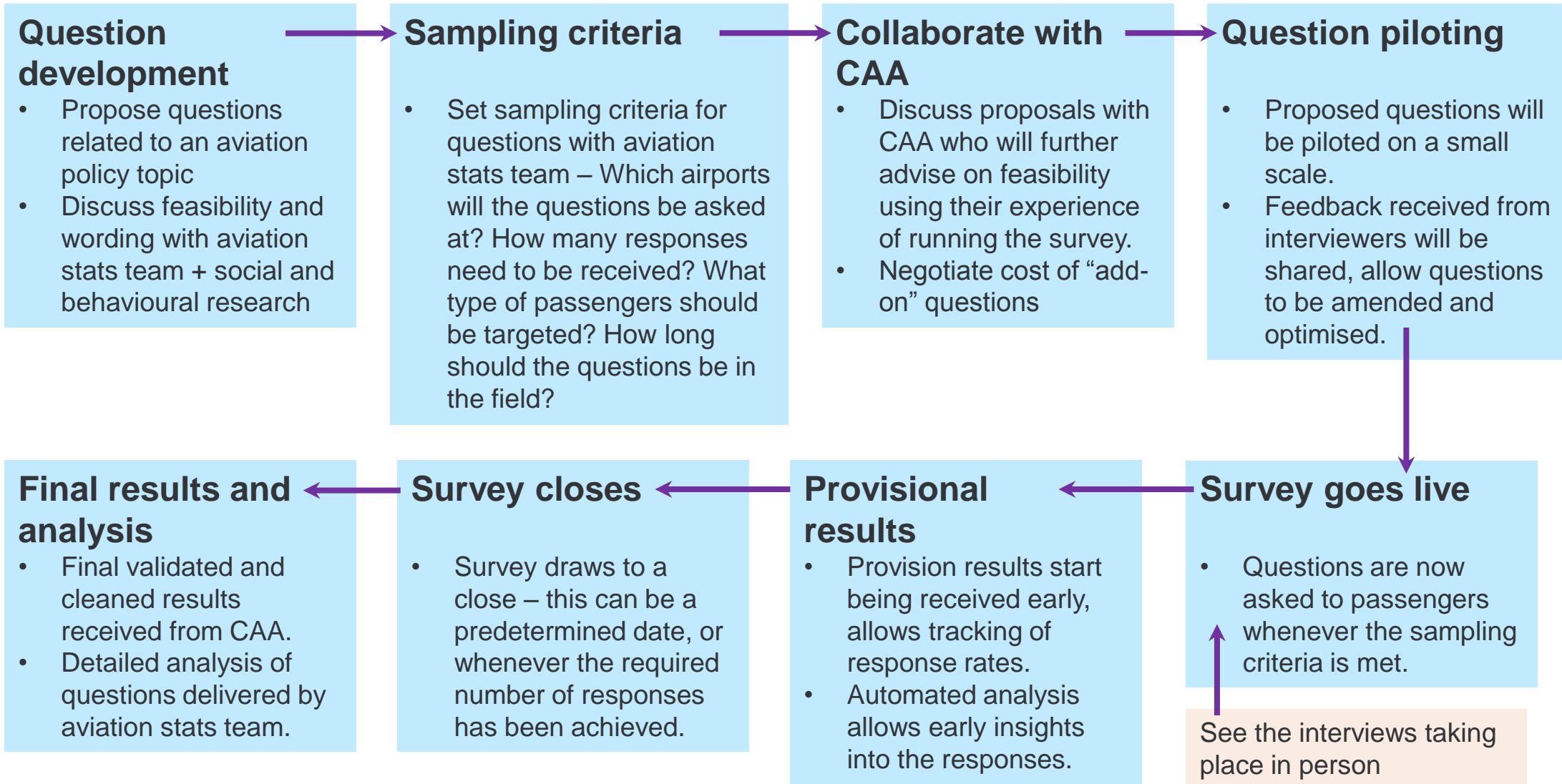▶ *In 2018, DfT launched the first ever set of dynamic "add-on" questions to the passenger survey to gather information on business travellers and surface access used by foreign residents on arrival to provide evidence (which previously didn't exist) to support the Aviation Strategy.*

▶ *A set of 16 questions (including a mixture of option questions styles) were posed at 7 UK airports for the first quarter of 2018.*

How does the process of dynamically "adding-on" work?

Question development
- Propose questions related to an aviation policy topic
- Discuss feasibility and wording with aviation stats team + social and behavioural research

Sampling criteria
- Set sampling criteria for questions with aviation stats team – Which airports will the questions be asked at? How many responses need to be received? What type of passengers should be targeted? How long should the questions be in the field?

Collaborate with CAA
- Discuss proposals with CAA who will further advise on feasibility using their experience of running the survey.
- Negotiate cost of "add-on" questions

Question piloting
- Proposed questions will be piloted on a small scale.
- Feedback received from interviewers will be shared, allow questions to be amended and optimised.

Final results and analysis
- Final validated and cleaned results received from CAA.
- Detailed analysis of questions delivered by aviation stats team.

Survey closes
- Survey draws to a close – this can be a predetermined date, or whenever the required number of responses has been achieved.

Provisional results
- Provision results start being received early, allows tracking of response rates.
- Automated analysis allows early insights into the responses.

Survey goes live
- Questions are now asked to passengers whenever the sampling criteria is met.

See the interviews taking place in person

How is analysis helping this process?

▸ Better use of **analytical tools and techniques** is helping to ensure the dynamic add-on process can deliver timely insights.

▸ There are three essential steps facilitating this…

(1) Data

- Provisional results can be received throughout the survey
- Negotiating the receipt of this data in a standardised and non-propriety format (e.g. csv) allows it to be easily loaded into analytical software

(2) Analytical software

- Use of specialist analytical software (e.g. R/Studio) can be used to reduce production time, whilst maintaining and even improving quality of outputs

(3) Reproducible analysis

- Critically, the use of software allows reproducible analytical pipelines to be established
- The loading, cleaning, maintenance, analysis and dissemination of data can be easily controlled in one place

Following this process has means that every time new data is received, high level analysis offering insights can ready to be shared in **less than 1 minute**

Analysis of CAA Survey Add-On: Provisional Results

Produced by Aviation & International Statistics Branch

23 February 2018

Overview

This document provides an analysis of provisional results from the CAA Survey Add-on (Trade in Services and Surface Access) for survey information collected over the period between **2018-01-02** and **2018-02-22**. The underlying survey data used to produce these results has *not* been cleaned or validated, and only provides a count of answers pertaining to specific questions to identify emerging trends from survey responses. A final set of results and analysis will be conducted once the full survey data has been received.

Summary of survey responses for Trade in Services questions

APT	Survey_Count	Target	Achieved
BHX	145	300	48 %
EDI	281	300	94 %
LCY	398	300	133 %
LGW	266	450	59 %
LHR	341	750	45 %
LTN	123	300	41 %
MAN	290	300	97 %
STN	154	300	51 %
Grand_Total	1998	3000	67 %

Summary of survey responses for Surface Access questions

APT	Survey_Count	Target	Achieved
BHX	202	300	67 %
LCY	189	450	42 %
LGW	365	600	61 %
LHR	318	600	53 %
LTN	243	300	81 %
MAN	295	300	98 %
STN	323	450	72 %
Grand_Total	1935	3000	64 %
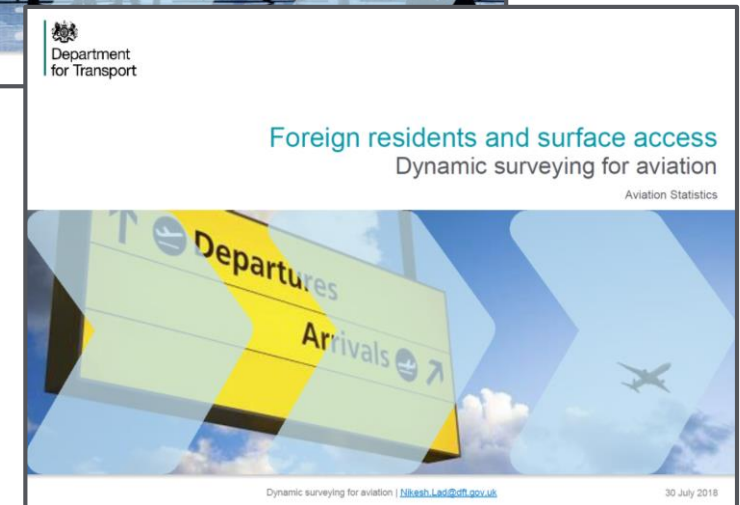
…dynamic surveying for aviation is now being offered across the aviation and airport expansion directorate as a readily available tool to *support policy making*

collaboration is key

be a disrupter

use the tools you have to be more flexible