

7 Describe the Intervention Logic

Figure 7.1: Describing the Intervention Logic within the STTRIDE Evaluation Process



7. Describe the Intervention Logic

Intervention logic

The intervention logic summarises the main components that are needed to enable the intervention to deliver its intended impacts, including the type of change in mode use that the technology is expected to bring about (which may include unintended changes). It also indicates how these components are connected. In this stage of the evaluation, a logic map diagram is created which summarises these links.

The intervention logic may be based on the information gathered during the ex ante appraisal and preparation of the business case for the intervention, but may also draw on evaluation evidence from similar or related interventions elsewhere.

As a first stage in summarising the intervention logic for a scheme within the STTRIDE framework, it is useful to understand the types of change in mode use that are expected to be brought about by the intervention. There are broadly five types of mode change that may be brought about by new technology:

- Increased sharing/ occupancy for existing trips, with reduced vehicle km for the same person km
- Shift to a different mode for existing trips, with reduced vehicle km for the same person km
- Replace existing journeys with shorter ones serving the same purpose (for example by using local pick-up points or local shared remote working office), with reduced vehicle km and reduced person km
- Replace journeys and shift mode, with a greater reduction in vehicle km for a reduction in person km
- Avoid travel (for example by home working, home delivery, or teleconferencing), with no vehicle km or person km for these activities.

It is important to bear in mind that with the exception of avoiding travel, all of these types of change could increase the multi-modal nature of journeys as people walk or cycle to access other modes.

The intervention logic map helps to identify whether there are any links between the components that are unclear, the evidence that is required from the evaluation, and to highlight any gaps in the evidence which will determine the focus of the evaluation effort and what will need to be measured. It will also help to ascertain which evaluation approach will make it possible to attribute the changes that are measured to the intervention. This logic map is then used to frame the research questions and decide on the evaluation approach.

If an appraisal was carried out before deciding to invest in the scheme, this is likely to have considered the nature of the expected impacts and the mechanisms by which these might be achieved. Such appraisals provide a useful starting point for developing the logic map. However other sources of information that were not part of the appraisal or which have become available since the appraisal (such as evaluation of similar interventions elsewhere) should also be considered. Consulting stakeholders will also provide useful insights into the intervention logic.

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An example logic map is shown in [Figure 7.2](#) for introduction of smart ticketing technology (Ball S et al, 2015). A STTRIDE template is available on the [STTRIDE web site](#) for creating a logic map diagram.

Note that before setting out the logic map in diagrammatic form, it may be helpful to create a table which can be used to identify and agree on the components to be included within each stage of the intervention logic corresponding with the section headings below.

7.1 Context

The first part of the logic map summarises the context for the intervention from the point of view of the different types of stakeholder, for example:

- National transport policies supported by the intervention
- Regional or local issues and priorities addressed by the intervention
- Other contextual factors that may influence the ability of the intervention to achieve its outcomes and impacts; these may be associated with different stakeholder groups.

7.2 Inputs

The intervention logic then considers the inputs, which can be measured quantitatively or qualitatively in the evaluation:

- Financial resources invested to implement the intervention
- Other resources invested – for example staff, skills, equipment, research.

7.3 Outputs

The outputs are the next stage in the intervention logic. The outputs are what the intervention is going to produce and they will be monitored during the evaluation. They may include:

- Physical products of the intervention such as a new database of public transport timetables and interchanges or a web site providing the booking service for a shared car scheme.
- Activities which result directly from the intervention such as promotion events or services for users
- Participation which results directly from the intervention – i.e. the types of stakeholder or geographic areas that will be influenced or affected.

In the example logic map in [Figure 7.2](#), the evaluation objective index numbers are referenced in brackets in the relevant components of the intervention logic.

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7.4 Outcomes

The next stage of the logic map identifies the outcomes that the intervention is aiming to achieve, including changes in quality of journeys (such as security or ease of interchange between modes), mode use and traffic but should also identify potential unintended outcomes. These will be monitored during the evaluation. Outcomes are often separated into:

- Short term outcomes
- Medium term outcomes (1 – 2 years).

7.5 Long term impacts

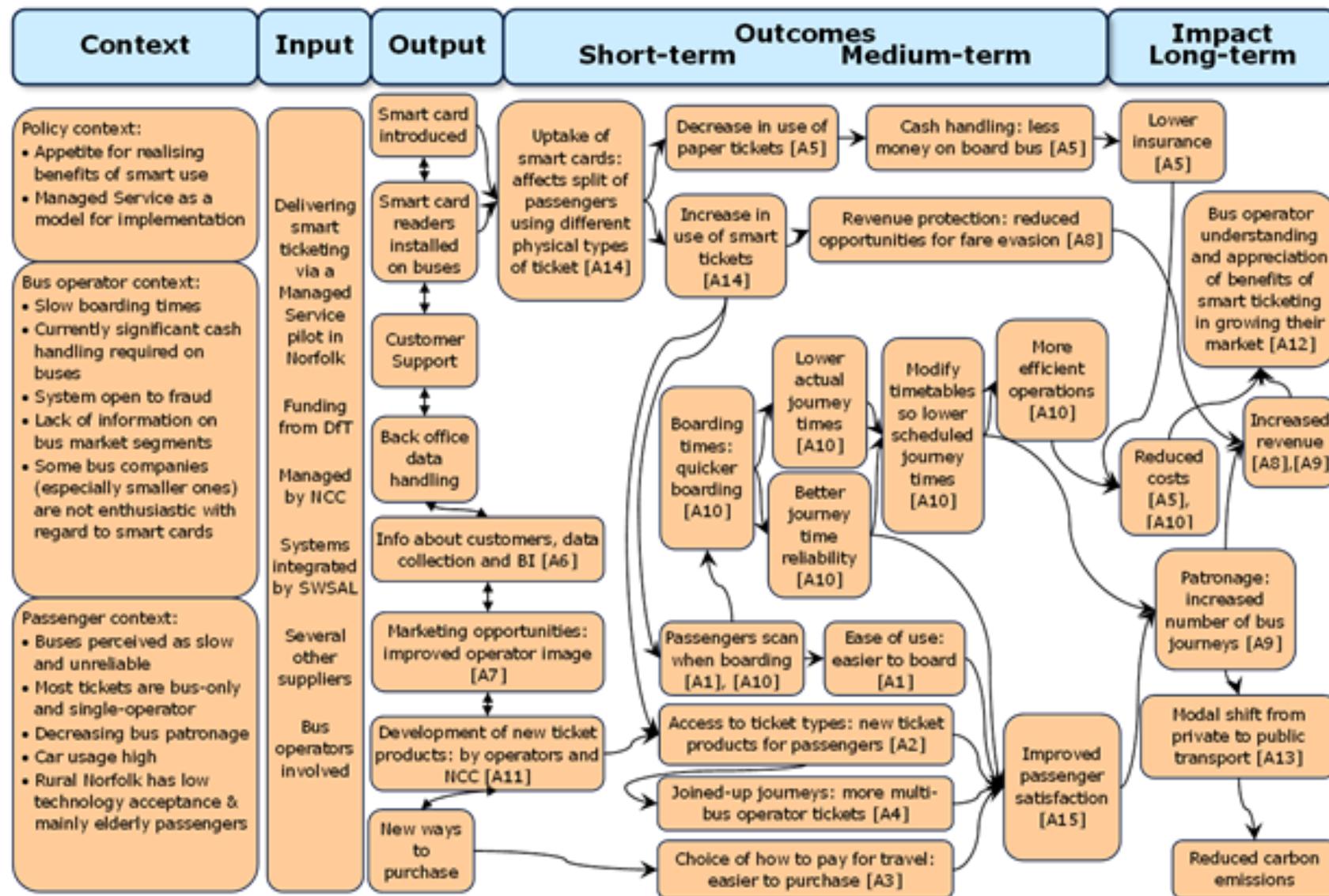
The final stage of the logic map is the long term impacts of the intervention, including the societal consequences of the changes in mode use, which will be measured during the evaluation. Again potential unintended as well as intended impacts should be considered. These long term impacts may be quite different from the short term impacts and may include impacts on:

- Environment (noise, air quality etc.)
- Safety
- Health
- Well-being
- Accessibility
- Social inclusion
- Economy.

In the case of new technologies, these impacts may become evident several years into the future.

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Figure 7.2: Example intervention logic map



Source: Ball S, 2015