

## Financial analysis of BLUEPRINT Library of Things Pilot - 04 October 2022

### Pilot project description

The Library of Things (LoT) is a library where people can reserve, loan, or hire items. The aim of a LoT is twofold, to reduce waste by shifting from owning to renting or loaning items, and to make the usage cheaper or altogether possible of expensive items for low-income households.

A LoT pilot in Essex was implemented in the BLUEPRINT Project as a free lending service in seven libraries; five existing library buildings and two existing mobile vehicle libraries across Essex. The pilot was carried out during the period of September 2021 – March 2022. The library stock consisted of 58 different items for hobby, sports, recreation and cleaning purposes. Across the seven different library sites a total of 81 items were available for loan varying per library, and a few of the most popular items, such as a carpet cleaners and drill bits, were available across all sites. In total during the seven-month period, 98 loans were made by 64 unique customers between the seven libraries.

The purpose of this financial analysis is to use the pilot's financial data to evaluate what a successful LoT would look like in terms of loan or rental activity under two types of financial models. First, if the LoT is subsidised by a council or another body on a continuous basis. Second, if the LoT is financed from its own rental revenues on a self-sustainable basis.

### Financial scenarios for the Library of Things

A financial scenario analysis was carried out assuming a twenty-year financial lifespan for the LoT with initial setup costs, twenty years of operational cost and twenty years of revenues. Standard financial analysis procedures were applied including discounting. The fixed basis of the analysis is the cost of setting up and operating the LoT, based on financial figures provided by Essex County Council, the council which implemented the pilot. Two types of revenues were calculated:

- The rental income if a rental fee is charged based on the number of items loaned and the rental fee.
- An estimate on the reduced cost of collection and processing of waste to the council as a result of residents shifting from ownership to LoT rental or loan.

Subsequently, three scenarios were made based on variations in the rental fee and number of items loaned. The scenarios are:

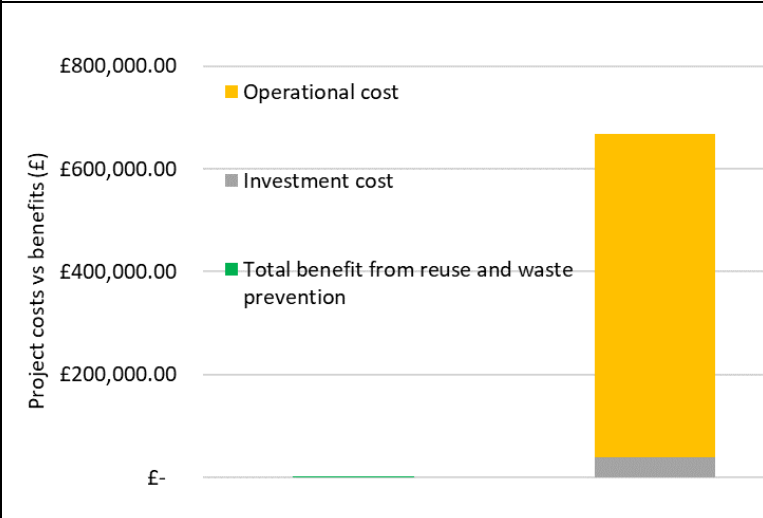
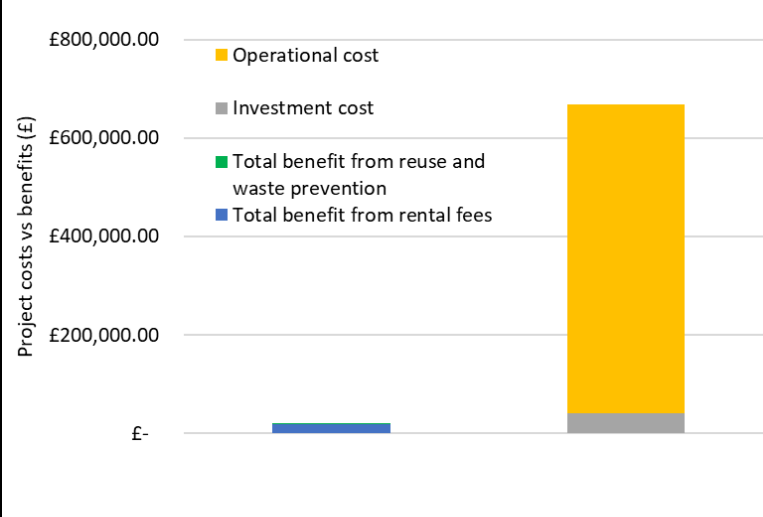
- Scenario 1: The **as piloted situation**, which uses the number of loans during the pilot (e.g. 98 loans made) and cost of setting up and running the project and no rental fee. The financial model for a council is a continuously subsidised LoT at no costs to people using the service.
- Scenario 2: The **as piloted with a rental fee situation**, which includes the number of loans during the pilot and the cost of setting up and running the project, with in this case an average rental fee of £5.00 for each item (regardless of loan duration).

- Scenario 3: The **financially self-sustainable situation**, where the average rental fees are set at £10.00 for each item (regardless of loan duration), and the number of loans is increased to the point that the revenues and costs are at least equal.

### Financial scenario results

The results for the three scenarios looking at the extrapolated total twenty-year period of running the seven LoT are presented in table 1 below. The table lists the main assumptions, headline result figures and a visual stacked bar overview of costs and benefits (revenues).

**Table 1. Overview of financial scenario results for the BLUEPRINT Library of Things pilot**

Scenarios	Key assumptions	Headline figures	Scenario comparison
Scenario 1: As piloted	<ul style="list-style-type: none"> <li>- Number of loans as piloted</li> <li>- Cost of running the LoT as piloted</li> <li>- Assumed that the LoT is run in an existing council library and that no rent has to be paid</li> <li>- No rental fees as piloted</li> <li>- Investments fully carried out by the council (no loans) with 2% internal interest rate applied.</li> </ul>	<p><b>Net present value (£):</b> -552,939</p> <p><b>Payback time:</b> not paid back</p> <p><b>Total costs (£):</b> 668,733</p> <p><b>Total benefits (£):</b> 1,398</p>	
Scenario 2: As piloted assuming a rental fee of £5.00	<ul style="list-style-type: none"> <li>- Number of loans as piloted</li> <li>- Cost of running the LoT as piloted</li> <li>- Assumed that the LoT is run in an existing council library and that no rent has to be paid</li> <li>- Average rental fee of £5.00 for each item</li> <li>- Investments fully carried out by the council (no loans) with 2% internal interest rate applied.</li> </ul>	<p><b>Net present value (£):</b> -536,915</p> <p><b>Payback time:</b> not paid back</p> <p><b>Total costs (£):</b> 668,733</p> <p><b>Total benefits (£):</b> 20,997</p>	

<p>Scenario 3: Financially self-sustainable</p>	<ul style="list-style-type: none"> <li>- Number of loans increased to 3,800 annually</li> <li>- Cost of running the LoT as piloted</li> <li>- Assumed that the LoT is run in an existing council library and that no rent has to be paid</li> <li>- Average rental fee of £10.00 for each item</li> <li>- Investments fully carried out by the council (no loans) with 2% internal interest rate applied.</li> </ul>	<p><b>Net present value (£):</b> 71,751</p> <p><b>Payback time:</b> 11 years</p> <p><b>Total costs (£):</b> 668,733</p> <p><b>Total benefits (£):</b> 765,478</p>	<p>Project costs vs benefits (£)</p> <p>£800,000.00 £600,000.00 £400,000.00 £200,000.00 £-</p> <p>Operational cost Investment cost Total benefit from reuse and waste prevention Total benefit from rental fees</p>
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### Conclusions of the financial analysis

Scenarios 1 and 2 result in a negative present value as the number of loans remain the same. The total net present value for a council during twenty years would be - £552,939 if no rental fee is charged, and -£536,915 if a £5 average rental fee is charged, across the twenty-year financial lifetime of the project. The main reason it is a high lossmaking project is because the number of loans are much lower relative to the costs of setting up and operating the LoT. This assumes existing library site(s) and staff can be used similar to the Essex County Council pilot, including no rental fee costs for the space, which provides for high operational cost efficiency. Note also that the calculations are made based on costs across seven different LoT pilot sites, which introduces further operational cost efficiencies by reducing setup costs and operational overheads per individual library.

Scenario 3 shows that at a rental fee of £10 on average per item, the number of loans would need to increase to 3800 per year to achieve financial self-sustainability. If this is broken down into the number of items that would be required, around 220 popular available items would need to be available, each of which are rented at least once every three weeks, in other words 17 times per year. On top of these items the LoT could also have additional items that are far less popular as long as this does not affect operational costs significantly. We can vary these assumptions, such as applying an average £5 rental fee, which would require 440 popular available items to be rented out at least once every three weeks, so as to reach financial self-sustainability.

A self-sustainable Library of Things model thus requires three different operational conditions. A high popularity of a substantial share of items meaning they are loaned out once every three weeks, an average rental fee in the range of £5 to £10 pounds per loan, and running multiple library sites or a large single library site with high resident footfall with low to no space rental fees. A large site or multiple libraries are needed to enable rental of at least several hundred items enabling economies of scale.