Nesta and the Open Data Institute

Open Data Challenge Series
Final Report

October 2015

pwc

uscreates
design for health and wellbeing

"Generating innovative and sustainable solutions to social challenges using open data".

Open Data Challenge Series

Important Notice

This report has been prepared for you, Nesta, in respect of the Open Data Challenge Series in accordance with the terms of our agreement dated 14 March 2014 and solely for the purpose and on the terms agreed with you. We accept no liability (including for negligence) to anyone else in connection with this report.

This report contains information obtained or derived from a variety of third party sources as indicated within the document. We have not sought to establish the reliability of those sources or verified the information so provided.

We understand that you may wish to publish this report on your website, and in doing so we would draw to your, and any other person who may access and read this report's, attention to the following:

1.   The work performed by PwC was performed in accordance with instructions provided by our client, Nesta, and was performed exclusively for their benefit and use.

2.   The report may therefore not include all matters relevant to the reader.

3.   The report is provided for general guidance only and does not constitute professional advice.

4.   The information contained in this report should not be acted on without obtaining specific professional advice.

5.   The reader agrees that PwC accepts no liability (including for negligence) to them in connection with this document.

Executive Summary

Overview

In December 2013 Nesta, the UK's innovation charity, and the Open Data Institute ('ODI') commissioned PricewaterhouseCoopers LLP 'PwC' and Uscreates to provide business development and impact measurement support to the Open Data Challenge Series ("ODCS") Programme. The ODCS was established in April 2013 as a series of seven challenges to support teams to develop innovative products or services to address social challenges using open data.

ODCS Process

The ODCS Programme involved four key stages:

➢ **Stage 1:** Scoping of the Challenge question;

➢ **Stage 2:** Application process and initial shortlisting;

➢ **Stage 3:** Challenge weekend and selection of Challenge finalists; and,

➢ **Stage 4:** Incubation support and selection of the Challenge winner.

The PwC and Uscreates team provided specialist input during Stages 2 to 4. This involved market and customer support to the Challenge participants during Stages 2 and 3 and, in Stage 4, more detailed one to one incubation advice and training in undertaking effective impact measurement and developing robust evidence based submissions for consideration by the Challenge judges.

Key Impacts

PwC and Uscreates were also tasked to undertake an initial review of the potential economic and wider social and environmental impacts of six of the Challenge finalists and winners[1]. This analysis was based on a review of the revenue, beneficiary and impact projections provided by the finalists and additional secondary data sources. As such the degree of certainty around outcomes may be more likely for the Challenge winners (given the subsequent £40,000- £50,000 prize money and further support offered) compared to other finalists.

---

1. Given our appointment to carry out this work, in January 2014, and the selection of a winner for the Crime and Justice challenge in the same month our input into this particular challenge was (necessarily) minimal.

Executive Summary – contd.

Our analysis identified that, of the £1m invested in the Open Data Challenge Series[2], every pound invested has the potential to generate:

➢ Across the six winners[3] – between **£2.30 to £4.00** of GVA (Gross Value Added) in NPV (Net Present Value) terms over three years as well as various other social and environmental impacts; and,

➢ Across all 18 ODCS finalists – between **£5.30 to £10.80** of GVA (Gross Value Added) in NPV (Net Present Value) terms over the next three years as well as again various other social and environmental impacts.

Lessons learnt

A separate and independent process evaluation of the ODCS is currently being completed by Icarus Collective. Independent of this review, and based on our experience of the delivery process, we believe the Programme has been successful because:

➢ The design and implementation of the Programme provided an appropriate balance in terms of resources and time to enable the generation of initial ideas and subsequent selection of finalists;

➢ Nesta and the ODI were responsive and flexible to the needs of Challenge participants and their feedback particularly at the early stages of the ODCS Programme; and,

➢ The criteria in selecting winners was non-prescriptive and focused on ensuring the most potentially sustainable and impactful ideas were progressed irrespective of where they were in their development cycle.

---

2. Taking account of only sic of the Programme Challenge.

3. We have applied a 40% sensitivity analysis to the projected impacts identified by both the finalists and winners. In the case of the former we are aware - based on informal evidence – that some of the finalists have applied for and been successful in securing other forms of funding support and, therefore, are also likely to have progressed their business ideas.

Contents

1. Introduction

Context

In December 2013 PwC and Uscreates (collectively 'we') were appointed by Nesta, to provide business development and impact measurement support to the Open Data Challenge Series ('ODCS') Programme. The ODCS was established in April 2013 as a series of seven challenges over two years (ending in June 2015) to support teams to develop innovative products or services to address social challenges using open data.

The ODCS Process

Our involvement in the Programme has focused on:

➢ Developing an "impact pathway" to measure the impacts of each challenge and the ODCS Programme as a whole;

➢ Agreeing and completing a range of scoring approaches, to monitor and assess the extent to which challenge applicants met Nesta's growth and impact aspirations, in order to inform the selection of the ODCS finalists and ultimately winners;

➢ Supporting the challenge definition stage through market research with users to understand opportunities and barriers to product/service delivery and how best to respond to these;

➢ Mentoring, product/service design and impact measurement support to the ODCS participants at the early challenge meet ups and creation weekends;

➢ Feasibility support including customer journey, market testing and funding advice to finalists during the incubation stage and, subsequently, providing "Impact and Sustainability" reports on each finalist for the Programme judges; and,

➢ Identifying the overall outputs and outcomes from the Challenge Programme including an assessment of the potential social and economic impact of the winners of each of the last 6 challenges.

We have provided, at Appendix 1, a detailed breakdown of the stages of the ODCS process and our support.

1. Introduction – Key Findings

Findings

The findings from our work are summarised in the rest of this report in terms of:

➢ **ODCS Impact Pathway (*Section 2*):** providing an overview of the ODCS Programme and project level theories of change which have underpinned our subsequent impact analysis of individual challenges;

➢ **Summary of Challenge Impacts (*Section 3*)**: indicating the potential magnitude of socio-economic impacts generated by the six challenges we have assessed; and,

➢ **Lessons Learnt (*Section 4*)**: outlining, in the context of the above, our initial findings in relation to what has worked well and what has not and therefore how the Programme could be improved in the future[4].

---

4. More detailed findings and recommendations will be provided via the process evaluation of the ODCS currently being undertaken by Icarus Collective.

2. ODCS Impact Pathway – Programme level

Aim

To establish the potential value of benefits that might be delivered by the Programme, as well as individual projects supported under each challenge, we developed – with NESTA and ODI staff – an ODCS impact pathway or measurement framework.

Impact Pathway

An 'impact pathway' is essentially a graphical representation of the relationships anticipated between the Programme and what benefits might arise. Initial consideration was given, therefore, to the:
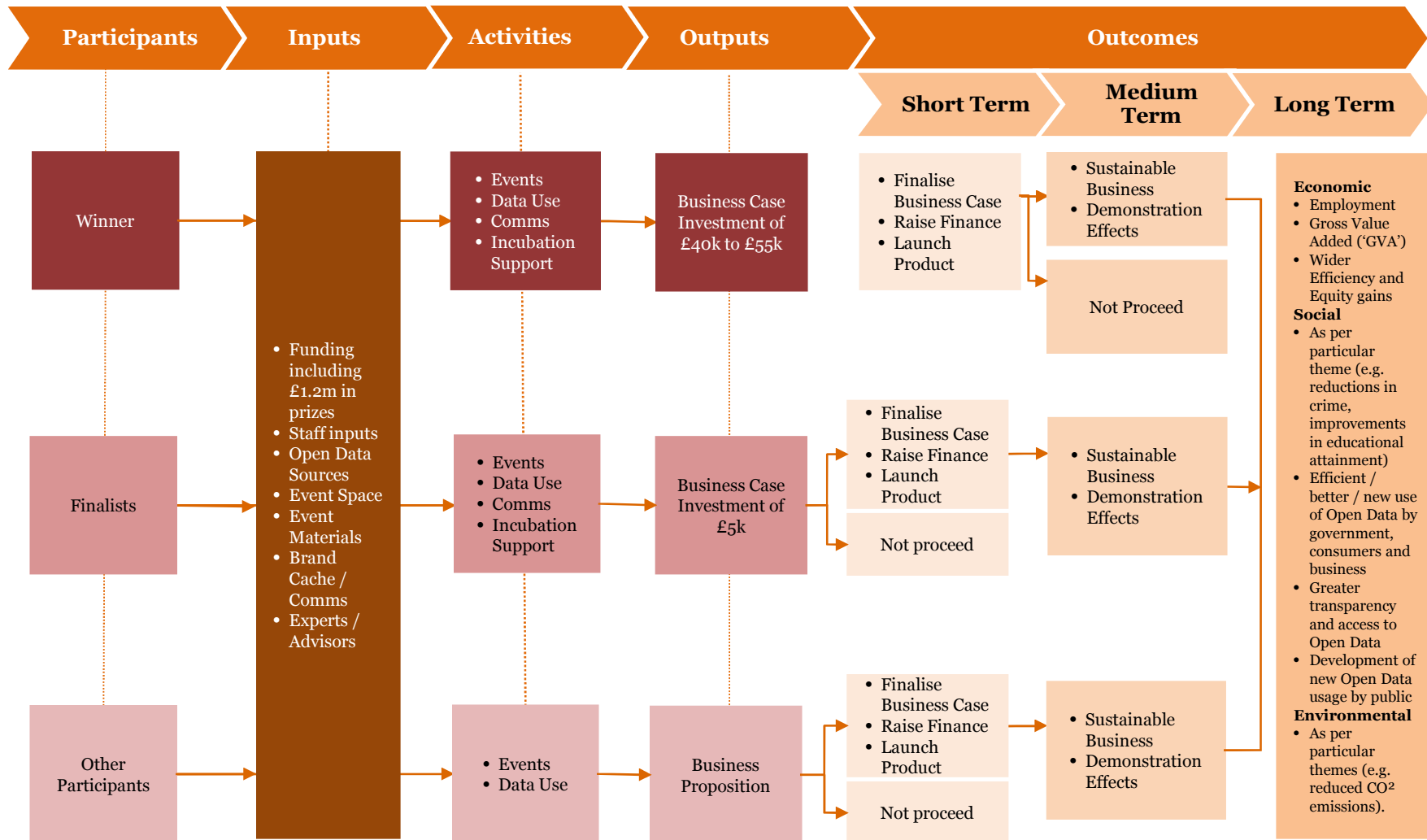
➢ Inputs associated with the Programme in terms of the resources allocated to Challenge activities;

➢ Outputs in relation to the activities these resources support and consequent actions undertaken by Challenge applicants; and,

➢ Outcomes across short, medium and longer term time periods and their relationship to Programme objectives.

In addition it was recognised that the relationship between these inputs, outputs and outcomes was likely to differ at a participant level in terms of the:

➢ Extent of their involvement and, as a result, support provided to them through the Programme;

➢ Likelihood of them setting up a fully operational and sustainable business; and,

➢ Longer term types of economic, social and environmental (net) benefits that might be generated.

Consequently, as illustrated in Figure 2.1 (overleaf), we suggest there are likely to be three 'types' of direct beneficiaries – applicants, finalists and winners – that receive different levels of support from Programme involvement which in turn will have a differential effect on the likelihood of any given project being taken forward (in terms of implementation, development timescale, activities and reach).

Figure 2.1: Open Data Challenge Series Impact Pathway

Participants	Inputs	Activities	Outputs	Outcomes		
				Short Term	Medium Term	Long Term

Winner → Funding including £1.2m in prizes; Staff inputs; Open Data Sources; Event Space; Event Materials; Brand Cache / Comms; Experts / Advisors →
- Events
- Data Use
- Comms
- Incubation Support

→ Business Case Investment of £40k to £55k →
- Finalise Business Case
- Raise Finance
- Launch Product

→
- Sustainable Business
- Demonstration Effects

Not Proceed

Finalists →
- Events
- Data Use
- Comms
- Incubation Support

→ Business Case Investment of £5k →
- Finalise Business Case
- Raise Finance
- Launch Product

Not proceed

→
- Sustainable Business
- Demonstration Effects

Other Participants →
- Events
- Data Use

→ Business Proposition →
- Finalise Business Case
- Raise Finance
- Launch Product

Not proceed

→
- Sustainable Business
- Demonstration Effects

Long Term

Economic
- Employment
- Gross Value Added ('GVA')
- Wider Efficiency and Equity gains

Social
- As per particular theme (e.g. reductions in crime, improvements in educational attainment)
- Efficient / better / new use of Open Data by government, consumers and business
- Greater transparency and access to Open Data
- Development of new Open Data usage by public

Environmental
- As per particular themes (e.g. reduced CO_2 emissions).

2. ODCS Impact Pathway – Programme level

So, for example, all participants received some degree of 'support' from their involvement in the initial stages of the programme up and to the creative weekend. Thereafter the finalists and ultimate winner received further advice and help in developing their product and business case, with the winner subsequently obtaining grant funding support of £40,000 or £50,000. The ultimate benefits of all this support – as reflected by the short, medium and longer term outcomes portrayed in Figure 2.1 – depend on:

➢ Whether, in the **short term** participants continue to develop and implement their ideas or, alternatively, do 'not proceed' to do so and thus no benefits are delivered;

➢ If they do proceed to implement their business case the subsequent benefits generated will depend on whether their product or service is commercially viable in the **medium term**; and, finally,

➢ Assuming a 'sustainable business' the aggregate benefits, in economic, social and environmental terms, can be illustrated in the **longer term** through various direct and indirect measures such as increased employment, better use of open data and reduced CO_2 emissions.

2. ODCS Impact Pathway – Project level

For the purposes of our work it was agreed – with NESTA and ODI – that we should focus our impact analysis, as illustrated in Figure 2.2 overleaf, solely upon the potential impacts of finalists and winners. In simple terms the overall Programme level pathway (at Figure 2.1) captures all the potential impacts that might be generated from **all** the activities of the Programme across **all** Challenges.

In contrast the Project level pathway (at Figure 2.2), focuses on the **specific** impacts that might arise only from the **three** finalists of any given Challenge. The latter pathway does not, therefore, seek to capture the potential impacts of other participants[5] **nor** the demonstration and other effects that the overall Programme may be having on, for example, data owners, other start-ups, consumer engagement and the use of Open Data[6].
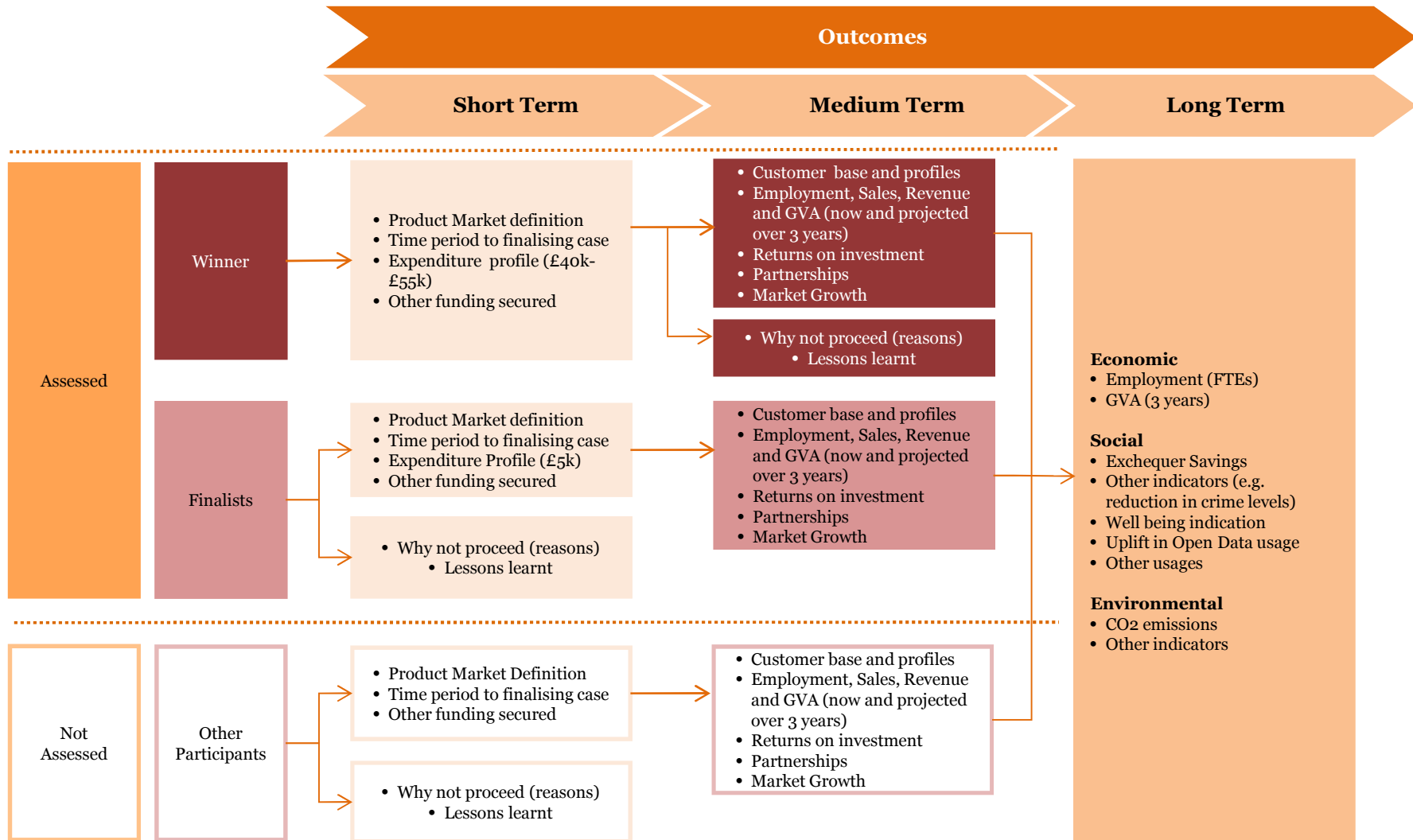
Consequently our assessment of benefits involved:

➢ Reviewing each finalist's business case and three year sales projections to identify the likely sustainability and direct economic impacts that might be generated in terms of employment and Gross Value Added; and,

➢ Given the above, the likely types and values associated with the related social and environmental impacts that might be potentially generated in terms, for example, of public exchequer savings and other effects (such as reduced crime levels, improved educational attainment and so forth) over the first three years of operation[7].

---

5. i.e. the final row of Figure 2.1.

6. i.e. as detailed in the final column of Figure 2.1.

7. It is also recognised that in certain cases – such as in the Education Challenge – some of the benefits will take significantly longer to materialise. In this Challenge changes in primary and secondary school pupils subject areas (as a result of new advice) may have subsequent benefits to pupils career progression significantly beyond the 3 years adopted for our impact analysis.

Figure 2.2: Open Data Challenge Series Project Specific Impact Pathway

Outcomes

Short Term → **Medium Term** → **Long Term**

Assessed

Winner
- Product Market definition
- Time period to finalising case
- Expenditure profile (£40k-£55k)
- Other funding secured

- Customer base and profiles
- Employment, Sales, Revenue and GVA (now and projected over 3 years)
- Returns on investment
- Partnerships
- Market Growth

- Why not proceed (reasons)
  - Lessons learnt

Finalists
- Product Market definition
- Time period to finalising case
- Expenditure Profile (£5k)
- Other funding secured

- Customer base and profiles
- Employment, Sales, Revenue and GVA (now and projected over 3 years)
- Returns on investment
- Partnerships
- Market Growth

- Why not proceed (reasons)
  - Lessons learnt

Not Assessed

Other Participants
- Product Market Definition
- Time period to finalising case
- Other funding secured

- Customer base and profiles
- Employment, Sales, Revenue and GVA (now and projected over 3 years)
- Returns on investment
- Partnerships
- Market Growth

- Why not proceed (reasons)
  - Lessons learnt

Economic
- Employment (FTEs)
- GVA (3 years)

Social
- Exchequer Savings
- Other indicators (e.g. reduction in crime levels)
- Well being indication
- Uplift in Open Data usage
- Other usages

Environmental
- CO_2 emissions
- Other indicators

3. *Summary of Challenge Impacts*

Introduction

For six of the seven challenges we provided Nesta with separate, detailed impact assessment reports outlining the potential social and economic impacts of each finalist's proposition in terms of:

➢ Total projected levels of year three employment and GVA impacts associated with each of the finalists proposed operations;

➢ The Net Present Value ('NPV') of these impacts in years 2 and 3 - in line with standard HM Treasury Green Book guidance[8];

➢ The key beneficiaries likely to be impacted by each finalist and the three key impacts across these beneficiaries in the short, medium and long-term;

➢ Key benefit metrics (where available) for the impacts identified which were then applied to projected beneficiary numbers to estimate the gross impacts per finalist; and,

➢ Two other potential scenarios in relation to future operations (which, given market uncertainties going forward, were: failure of all finalists to proceed and potential failure of some of the finalists) to provide NESTA and their partners with an alternative set of outcomes given that, without perfect foresight, the certainty of participants projections is unclear.

---

8. The Green Book: Appraisal and Evaluation in Central Government, 2014.

3. Summary of Challenge Impacts – Our Approach

We have provided a summary of the key findings from all of our six Impact Assessment reports for the ODCS at Appendix 2. In producing these reports we adopted a four stage process:

➢ **Stage One:** Review of Challenge finalist's submissions and related background materials (including an impact pathway or theory of change (which captured each finalist organisation's inputs, outputs and outcomes and customer journey papers) to identify each finalist's:

- Employment and GVA impacts for the first three years of operation;
- Key short, medium and long-terms impacts;
- Beneficiary numbers over the same time period; and,
- Relevant valuation metrics (where available).

➢ **Stage Two:** Review of secondary data sources such as research papers and the valuation metrics in the Cabinet Office's Unit Cost Database for each Challenge theme in order to identify the key cost/benefit metrics (where available) for the short, medium and long-term impacts identified in above. These were then applied to the beneficiary numbers identified to estimate the projected gross impacts per finalist[9].

➢ **Stage Three:** Presentation of the annual aggregated employment, GVA and wider social (and where relevant environmental) impacts across the Challenge finalists based on the analysis undertaken in Stages One and Two above. In addition, to take account of Net Present Value ('NPV') of these impacts, in years 2 and 3, the GVA and economic impacts were discounted by 3.5% per annum in line with standard Treasury Green Book guidance[10].

➢ **Stage Four:** In order to provide NESTA and their partners with an alternative set of outcomes (given uncertainty regarding the finalists impact projections) we considered two other potential scenarios, namely:

- In the worst case, by year three, all of the projects fail and consequently the impacts identified in Stage Three are not secured; and,

- Based on previous programmes we are aware of, aimed at supporting start-ups and SMEs, we assumed the failure rate across these projects is likely to be around 40%.

---

9. While we made judgements, based on existing research, of such benefits and costs we recognise that going forward alternative impacts might be identified.

10. The Green Book: Appraisal and Evaluation in Central Government, 2014.

3. Summary of Challenge Impacts - Limitations

It is important to note the limitations and challenges in terms of the scope of the organisational analysis and hence robustness of our the projected outcomes, namely:

➢ The projected beneficiary estimates and impacts have been based on the data provided by the finalists and we have not undertaken any due diligence regarding the accuracy of these;

➢ We have assumed that all finalists will continue their operations regardless of whether they have been awarded the challenge prize, however, there is significant uncertainty regarding the projected impacts particularly for the runners up who may not all be able to access alternative forms of finance to continue to develop their business idea;

➢ We have not undertaken any primary data collection (e.g. direct beneficiary surveys) in estimating the costs and benefits of each impact. Instead we have used a number of secondary data sources to provide a series of 'ready reckoners' or proxies as a means of estimating the value to the exchequer and society of each initiative; and,

➢ We have not undertaken an HM Treasury Green Book compliant 'additionality' analysis of the projected outputs and outcomes but have instead taken a prudent view by applying impact measurement estimates to only 5% of the beneficiaries identified and providing sensitivities in relation to alternative 'worst' and 'medium' case scenarios (of total or partial failure of projects over the next three years).

3. Summary of Challenge Impacts – Summary of Challenge Themes and Finalists

Table 3.1 below provides an overview of the seven Challenge themes and the organisational names of the winners and runners up:

Table 3.1: ODCS Summary of Challenge Themes and Finalists			
Challenge Name	**Theme**	**Winner**	**Runners Up**
Crime and Justice Challenge	The challenge invited teams to consider how open data projects can be developed to achieve one of the following: ➢ Increase community involvement with the criminal justice system; ➢ Create further evidence for what are effective interventions for rehabilitation; or, ➢ Address the rise in personal crime.	Check That Bike	Deaf Justice Total Car Check
Education Challenge	This challenge invited teams to consider how Open Data projects can help parents make informed choices about their children's education in one (or more) three key areas: ➢ Expressing a preference for a school; ➢ Choosing a subject or other learning priorities; or, ➢ Engaging with their children's learning.	Skills Route	In Context: Brenda, Illustreets
Energy and Environment Challenge	This challenge invited teams to collaborate and compete with each other to use Open Data to build services that supported communities to either: ➢ Group buy their energy and save money; or, ➢ Undertake community based energy efficiency interventions; or, ➢ Start to generate their own energy.	Community Energy Manager	Energy Benchmarking + Energy Schools
Housing Challenge	This challenge invited teams to consider: *"how can we use open data to help people get the best out of renting?"*	MoveMaker	OpenJamJar RentSquare
Food Challenge	This challenge invited teams to consider: *"how can we use open data to help people eat more healthily, eat more sustainably and/or have a more secure food chain?"*	Food Trade	OMYGOODNESS Vitalfootprint
Heritage and Culture Challenge	This challenge invited teams to consider: *"how can we use open data to engage more people, and more diverse people, in UK heritage and culture?'*	Culture Everywhere	City Radar Rabble
Jobs Challenge	This challenge invited teams to consider: *"how can we use open data to help people get better jobs or create new jobs?*	Performance in Context	Bus Start Pikhaya Smart Streets

3. Summary of Challenge Impacts – Winner level

Winner Level Impacts

Given the greater certainty of the six Challenge winners' impacts, as a result of winning the ODCS prize money and subsequent follow on support, Table 3.2 below outlines all the winner impacts, which, assuming some or all succeed in operating over the next three years, might range between:

- 17 to 37 jobs;

- £2.3m to £4m GVA (in NPV terms);

- £81m to £137.2m wider social and economic impacts (in NPV terms); and,

- £134,260 to £224,600 environmental impacts (again in NPV terms).

Table 3.2: Aggregated Year Three Projected Employment, GVA, Economic, Social and Environmental Impacts for ODCS Winners			
Impact	**All Fail**	**40% Fail**	**Participant Projected Outcomes**
Employment	0	17 to 22	29 to 37
GVA (NPV)	0	£2.3m to £2.4m	£3.9m to £4m
Social and Economic Impacts (NPV)	0	£81m to £82m	£135.7m to £137.2m
Environmental Impact (NPV)	0	£134,260 to £134,760	£223,770 to £224,600

These levels of benefit suggest, under the "40% fail" and "all projects continue" scenarios, that:

- The costs of Programme support to the winners for all seven challenges (of around £1.2 million) is likely to be justified on economic impact grounds alone. Specifically every pound invested in the Open Data Challenge Series has the potential to generate between **£2.30 to £4.00** of GVA (Gross Value Added) in NPV (Net Present Value) terms over three years[11]; and, in addition,

- Presuming that the projects are sustainable they will also generate significant social benefits.

---

11. This estimate is based on an investment of £1m – taking account of only six of the Programme Challenges.

---

3. Summary of Challenge Impacts – Programme level

Programme Level Impacts

As illustrated, in Table 3.3 below, including both the 6 winners and the 12 other finalists, total Programme level impacts, might range between:

➢ 75 to 141 jobs;

➢ £5.3m to £10.8m GVA (in NPV terms);

➢ £161m to £302m wider social and economic impacts (in NPV terms); and,

➢ £3.35m to £5.61m environmental impacts (again in NPV terms).

Table 3.3: Aggregated Year Three Projected Employment, GVA, Economic, Social and Environmental Impacts for ODCS Finalists			
Impact	**All Fail**	**40% Fail**	**Participant Projected Outcomes**
Employment	0	75 to 85	125 to 141
GVA (NPV)	0	£5.3m to £6.4m	£8.8m to £10.8m
Social and Economic Impacts (NPV)	0	£161.1m to £181.3m	£268m to £301.5m
Environmental Impact (NPV)	0	£3.35m to £3.37m	£5.59m to £5.61m

These levels of benefit suggest, under the "40% fail" or "all projects continue" scenarios, that:

➢ The costs of Programme support to the semi-finalists for all seven challenges (of around £1.2 million) is likely to be justified on economic impact grounds alone. Specifically every pound invested in the Open Data Challenge Series has the potential to generate between **£5.30 to £10.80** of GVA (Gross Value Added) in NPV (Net Present Value) terms over three years[12]; and, in addition,

➢ Presuming that the projects are sustainable they will also generate significant social benefits.

---

12. This estimate is based on an investment of £1m – taking account of only six of the Programme Challenges.

---

3. Summary of Challenge Impacts – 40% Fail Scenario

Table 3.4 below indicates the levels of employment, GVA and socio-economic impacts likely to be generated by the finalists across each of the six Challenges based on the lower range of impacts under the '40% fail' scenario and demonstrates:

➢ The levels of direct employment are relatively evenly spread across the six Challenges;
➢ In relation to GVA it is apparent that the Food finalists are still likely to generate the greatest level of profits whereas both Housing and Heritage and Culture will probably generate the least profits; and,
➢ The levels of benefits over the first three years of operation are evenly spread across the finalists except for the Food Challenge which continues to capture the majority share of total benefits projected at 54%.

Table 3.4: Summary of ODCS Challenge Level Impacts (40% Fail Scenario – Lower range)						
Challenge	Employment	%age	GVA (NPV)	%age	Socio-economic impacts (NPV)	%age
Education Challenge	7	9%	£487,200	9.2%	£29.4m	18%
Energy and Environment Challenge	14	19%	£1.12m	21%	£22.7m	14%
Housing Challenge	8	11%	£321,000	6%	£8.4m	5%
Food Challenge	19	25%	£1.9m	36%	£89m	54%
Heritage and Culture Challenge	17	23%	£384,000	7%	£12m	7%
Jobs Challenge	10	13%	£1.1m	21%	£3m	2%
Total	**75**	**100%**	**£5.3m**	**100%**	**£164.5m**	**100%**

3. Summary of Challenge Impacts – All Finalists Operate to Plan

Table 3.5 below indicates the levels of employment, GVA and socio-economic impacts likely to be generated by the finalists across each of the six Challenges. This is based on the upper range of impacts from the finalists submissions and demonstrates:

➢ The levels of direct employment are relatively evenly spread across the six Challenges;
➢ In relation to GVA it is apparent that the Food finalists are likely to generate the greatest level of profits whereas Heritage and Culture will probably generate the least profits. This is primarily a function of the differences in business models and customer reach; and,
➢ The levels of benefits over the first three years of operation are evenly spread across the finalists except for the Food Challenge which captures 48% of total benefits projected.

Table 3.5: Summary of ODCS Challenge Level Impacts (Participant Projections – Upper range)						
Challenge	**Employment**	**%age**	**GVA (NPV)**	**%age**	**Socio-economic impacts (NPV)**	**%age**
Education Challenge	17	12%	£848,000	8%	£51.4m	17%
Energy and Environment Challenge	26	18%	£1.9m	18%	£37.6m	12%
Housing Challenge	18	13%	£2.4m	22%	£37m	12%
Food Challenge	35	25%	£3.1m	29%	£148m	48%
Heritage and Culture Challenge	29	21%	£640,000	6%	£28m	9%
Jobs Challenge	16	11%	£1.9m	18%	£5m	2%
Total	**141**	**100%**	**£10.8m**	**100%**	**£307m**	**100%**

4. Lessons Learnt

Nesta and ODI have commissioned a separate and independent process evaluation of the ODCS that is currently being completed by Icarus Collective. Our observations are separate to this evaluation although both PwC and Uscreates have also contributed to the Icarus research.

In broad terms our views on 'lessons learnt' are that the Programme has been successful not least because:

➢ The design and implementation of the Programme provided an appropriate balance – in terms of resource and time – to generating initial ideas, rapidly – through the creative weekends – selecting appropriate finalists and thereafter ensuring that project ideas were developed and supported within 2 months. In particular we suggest that no excessive burdens were placed on candidates at any stage and that all elements of the Programme were supportive;

➢ Nesta and ODI were responsive and flexible to the needs of candidates and consequent feedback particularly at the early stages of the Programme. This was reflected in various ways, for example, including revisions to the judging process, information requirements of candidates and focus on one issue rather than three as the Programme progressed;

➢ The criteria in selecting winners was non-prescriptive in terms of the stage of development of technology, app development and other IT related issues and the key to winners success was how they focused on the ways in which benefits and commercial sustainability were likely to be achieved and not any specific technological 'solution';

➢ The ethos, culture and attitude of NESTA and ODI staff was focused upon supporting all candidates through a 'co-production' process that, even where candidates might not have progressed beyond a given stage, provided clear routes to other forms of support or partnerships for project development; and,

➢ The engagement of judges who had relevant sector expertise, peer recognition and real commitment to examine candidate propositions and debate the relative merits of proposals against a clear set of criteria developed at the outset of the Programme.

Appendices

Appendix 1: ODCS Process and Inputs

table			
Table 1.1: The ODCS Process and Our Inputs			
Stage	Description	PwC/Uscreates input	Typical timing per Challenge
Stage 1: *Scoping*	Development of the challenge question – this involved raising a question based on the open data available, market research and a specific policy challenge/social need. This stage also involved a 'Challenge Definition Day' for each challenge where the specific challenge question was crafted and finalised.	Uscreates supported the challenge definition stage through market research with users to understand opportunities and barriers within each challenge theme.	4 weeks
Stage 2: *Application*	a. Launch and open application process – via the formal launch of the challenge question and opening of Nesta's challenge specific platform on Collabfinder for individuals and teams to sign up and start to upload their ideas; b. Early challenge meet up to: "*provide an opportunity for potential participants to hear initial user research relating to the challenge and to build teams and develop their ideas*"; c. Application close – deadline for teams to submit their initial ideas. Consideration of completed projects submitted via CollabFinder and subsequent selection of teams to attend the creation weekend; and, d. Challenge participant (late) meet up – providing an opportunity for the short-listed projects to build their teams and prepare for the creation weekend as well as providing an opportunity for unsuccessful candidates to explore opportunities for collaboration.	PwC provided an introduction to impact measurement to the ODCS participants at the early challenge meet ups. PwC and Uscreates reviewed the initial applications from the shortlisted projects in preparation for the Creation weekend.	8 to 10 weeks

Appendix 1: ODCS Process and Inputs contd.

Stage	Description	PwC/Uscreates input	Typical timing per Challenge
Stage 3: *Weekend*	a. Creation weekend – providing an opportunity for the challenge teams to build and test their app, receive feedback from technical and sector specialists and refine their proposition. It also involved an interview with PwC/Uscreates to provide insight and challenge; b. Pitch – short pitches by the teams to a panel of sector specialist judges; and, c. Selection of three finalists each of who received a £5,000 prize and access to a tailored package of support to develop their ideas further.	PwC and Uscreates attended six of the challenge weekends where we provided mentoring, service design and impact measurement support to the participants and interviewed all the teams in order to provide the challenge judges with a traffic light rating of each team to inform the short-listing process of the challenge finalists.	2 days
Stage 4: *Incubation*	a. Diagnostic session, business planning and application support - one to one support to each finalist team to refine their product and support their final application to the challenge judges; b. Final application – completion and subsequent submission of the final application by the finalist teams to Nesta. Circulation of the applications to PwC, Uscreates and the judges for review and consideration; c. Impact and Sustainability report – scoring of the three finalists against the ODCS judging criteria and submission of the Impact and Sustainability report to Nesta; d. Selection of challenge winner – based on the finalist teams applications, the Impact and Sustainability report and finalists final pitches/interviews. Subsequent award of the challenge prize of £40,000 (raised to £50,000 in the case of the Heritage and Culture and Jobs challenges); and, e. Final impact report – to Nesta, providing an overview of the potential socio-economic impacts that might, over the next three years, be generated by the three finalists for each challenge based on each finalists projected outcomes.	PwC and Uscreates provided a tailored package of business development and technical support including theory of change, customer journey, market testing and funding advice (as required) to each of the finalist teams to help them further refine and develop their ideas. We also reviewed the final applications submitted by the finalists and provided an 'Impact and Sustainability' report to the judges, Nesta and the ODI to inform the selection of the Challenge winner. The team also undertook a detailed assessment of the potential social, economic and wider impacts of the finalists for each challenge in order to provide six challenge specific 'Impact Assessment Reports' to Nesta.	10 to 12 weeks

Appendix 2: Summary of Challenge Impacts – Education Challenge

Education Challenge

Nesta and the ODI launched its second Open Data Challenge, in January 2014, based on the theme of education. This challenge invited teams to consider how Open Data projects can help parents make informed choices about their children's education in one (or more) three key areas:

➢ Expressing a preference for a school;

➢ Choosing a subject or other learning priorities; or,

➢ Engaging with their children's learning.

The Education Creation weekend was attended by approximately 35 applicants across 15 teams in March 2014. Three semi-finalists – In Context: Brenda, Illustreets and Skills Route - were subsequently short-listed to develop their ideas with Skills Route being awarded the Challenge prize in June 2014.

Table 1 below presents the aggregated socio-economic impacts for the Education Challenge finalists at year three based on three scenarios (i.e. "all businesses fail" vs. "40% of businesses fail" vs. "all projects continue").

Table 1: Aggregated Year Three Projected Employment, GVA and Social Impacts for Education Finalists			
Impact	**All Fail**	**40% Fail**	**Participant Projected Outcomes**
Employment	0	7 to 10	12 to 17
GVA (NPV)	£0	£487.2 to £509	£812 to £848
Social and Economic Impacts (NPV)	£0	£29.4m to £31m	£49m to £51.4m

Assuming no failures the potential range of benefits by year three might be between:

➢ 7 to 17 jobs;

➢ £487,200 to £848,000 GVA (in NPV terms); and,

➢ £29.4m to £51.4m social impacts (in NPV terms).

Appendix 2: Summary of Challenge Impacts – Energy and Environment Challenge

Energy and Environment Challenge

Nesta and the ODI launched its third Open Data Challenge, in February 2014, based on the theme of Energy and Environment. This challenge invited teams to collaborate and compete with each other to use Open Data to build services that supported communities to either:

➤ Group buy their energy and save money; or,

➤ Undertake community based energy efficiency interventions; or,

➤ Start to generate their own energy.

Sixteen teams attended the Energy and Environment Creation and Innovation weekend in March 2014. Three semi-finalists – Energy Benchmarking +, Community Energy Manager and Energy Schools - were subsequently short-listed to develop their ideas with Community Energy Manager being awarded the Challenge prize in July 2014. Table 2 below presents the aggregated socio-economic and wider impacts for the Energy and Environment Challenge finalists at year three.

Table 2: Aggregated Year Three Projected Employment, GVA, Social and Environmental Impacts for Energy and Environment Finalists			
Impact	**All Fail**	**40% Fail**	**Participant Projected Outcomes**
Employment	0	14 to 16	24 to 26
GVA (NPV)	£0	£1.12m to £1.14m	£1.86m to £1.9m
Social Impact (NPV)	£0	£19.3m	£32.1m
Environmental Impact (NPV)	£0	£3.355m to £3.368m	£5.591m to £5.613m

Based on the "40% fail" or "all projects continue" scenarios we suggest the potential benefits by year three of this challenge might be between:

➤ 14 to 26 jobs;

➤ £1.12m to £1.9m GVA (in NPV terms); and,

➤ £19.3m to £32.1m social impacts (in NPV terms) and £3.4m to £5.6m environmental impacts (in NPV terms).

Appendix 2: Summary of Challenge Impacts – Housing Challenge

Housing Challenge

Nesta and the ODI launched its fourth Open Data Challenge, in January 2014, based on the theme of housing. This challenge invited teams to consider: "*how can we use open data to help people get the best out of renting?*"

Approximately 35 applicants across 15 teams attended the Housing Creation and Innovation weekend hosted by Nesta and the ODI in June 2014. Three semi-finalists – MoveMaker, OpenJamJar and RentSquare - were subsequently short-listed to develop their ideas with MoveMaker being awarded the Challenge prize in December 2014.

Table 3 below presents the aggregated socio-economic impacts for the Housing Challenge finalists at year three.

Table 3: Aggregated Year Three Projected Employment, GVA and Social Impacts for Housing Finalists			
Impact	**All Fail**	**40% Fail**	**Participant Projected Outcomes**
Employment	0	8 to 11	13 to 18
GVA (NPV)	£0	£321 to £1.4m	£535 to £2.4m
Social and Economic Impacts (NPV)	£0	£8.4m to £22m	£14m to £37m

Based on the "40% fail" or "all projects continue" scenarios we suggest the potential benefits by year three of this challenge might be between:

➢ 8 to 18 jobs;

➢ £321,000 to £2.4m GVA (in NPV terms); and,

➢ £8.4m to £37m social impacts (in NPV terms).

Appendix 2: Summary of Challenge Impacts – Food Challenge

Food Challenge

Nesta and the ODI launched its fifth Open Data Challenge, in August 2014, based on the theme of Food. This challenge invited teams to consider: "*how can we use open data to help people eat more healthily, eat more sustainably and/or have a more secure food chain?*"

Fifteen teams attended the Food Creation and Innovation weekend hosted by Nesta and the ODI in November 2014. Three semi-finalists – Food Trade, OMYGOODNESS and Vitalfootprint - were subsequently short-listed to develop their ideas with Food Trade being awarded the challenge prize in February 2015.

Table 4 below presents the aggregated socio-economic impacts for the Food Challenge finalists at year three.

Table 4: Aggregated Year Three Projected Employment, GVA and Social Impacts for Food Finalists			
Impact	**All Fail**	**40% Fail**	**Participant Projected Outcomes**
Employment	**0**	19 to 21	31 to 35
GVA (NPV)	**£0**	£1.9m	£3.1m
Social and Economic Impacts (NPV)	**£0**	£89m	£148m

Based on the "40% fail" or "all projects continue" scenarios we suggest the potential benefits by year three of this challenge might be between:

➢ 19 to 35 jobs;

➢ £1.9m to £3.1m GVA (in NPV terms); and,

➢ £89m to £148m social impacts (in NPV terms).

Appendix 2: Summary of Challenge Impacts – Heritage and Culture Challenge

Heritage and Culture Challenge

Nesta and the ODI launched its sixth Open Data Challenge, in November 2014, based on the theme of Heritage and Culture. This challenge invited teams to consider: "*how can we use open data to engage more people, and more diverse people, in UK heritage and culture?*"

Thirteen teams attended the Heritage and Culture Creation and Innovation weekend hosted by Nesta and the ODI in the last weekend of February 2015. Three semi-finalists – City Radar, Culture Everywhere and Rabble - were subsequently short-listed to develop their ideas with Culture Everywhere being awarded the Challenge prize in May 2015.

Table 5 below presents the aggregated socio-economic impacts for the Heritage and Culture Challenge finalists at year three.

Table 5: Aggregated Year Three Projected Employment, GVA and Social and Economic Impacts for Heritage and Culture Finalists			
Impact	**All Fail**	**40% Fail**	**Participant Projected Outcomes**
Employment	0	17	29
GVA (NPV)	£0	£384,000	£640,000
Social and Economic Impacts (NPV)	£0	£12m to £17m	£20m to £28m

Based on the "40% fail" or "all projects continue" scenarios we suggest the potential benefits by year three of this challenge might be between:

➢ 17 to 29 jobs;

➢ £384,000 to £640,000 GVA (in NPV terms); and,

➢ £12m to £17m social and economic impacts (in NPV terms).

Appendix 2: Summary of Challenge Impacts – Jobs Challenge

Jobs Challenge

Nesta and the ODI launched its seventh and final Open Data Challenge, in January 2015, based on the theme of jobs. This challenge invited teams to consider: "*how can we use open data to help people get better jobs or create new jobs?*"

Ten teams attended the Jobs Creation and Innovation weekend in the last weekend of April 2015. Three semi-finalists – Bus Start, Performance in Context and Pikhaya Smart Streets - were subsequently short-listed to develop their ideas with Performance in Context being awarded the challenge prize in July 2015.

Table 6 below presents the aggregated economic impacts for the Jobs Challenge finalists at year three.

Table 6: Aggregated Year Three Projected Employment, GVA and Economic Impacts for Jobs Finalists			
Impact	**All Fail**	**40% Fail**	**Participant Projected Outcomes**
Employment	0	10	16
GVA (NPV)	£0	£1.1m	£1.9m
Social and Economic Impacts (NPV)	£0	£3m	£5m

Based on the "40% fail" or "all projects continue" scenarios we suggest the potential benefits by year three of this challenge might be between:

➢ 10 to 16 jobs;

➢ £1.1m to £1.9m GVA (in NPV terms); and,

➢ £3m to £5m economic impacts (in NPV terms).