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The Smart Accelerator:
A Qualitative Process Evaluation

How to Create Smart Project Partnerships.

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Executive Summary

Introduction

The Smart Accelerator was an ERDF funded project which was designed to help Smart[1] city, community and sustainable island projects in Scotland to transition from initial concept stage to being investable, implementable project partnerships. The 14 supported projects were chosen as their ideas brought together mobility, low-carbon and innovative technology to enable Smarter and more sustainable cities, communities and islands. The Accelerator was led by the Edinburgh Centre for Carbon Innovation (ECCI), and supported by the Scottish Government, Transport Scotland, the Scottish Cities Alliance, Scottish Enterprise and Highlands and Islands Enterprise and core-funded through the European Regional Development Fund (ERDF).

Purpose of this Report

This report identifies the key factors for success of the Accelerator. It:

- explores the key processes of the Accelerator;
- looks at the participants' and organisers' experience with the project;
- examines the impact on funding support; and
- makes recommendations on ways to improve the approach.

Key Findings

- The Accelerator was delivered through four key processes. We describe these in this report as:
    - Identification
    - Shaping
    - Assessing Feasibility
    - Sharing
- Each of these key processes was an accumulation of advice and practical support tools. These tools were used at different stages, and once introduced stretched throughout the Accelerator's project period.
- A continuous interaction between the processes was crucial for the participants in order to meet their individual needs. The participants benefited specifically though continuous 'shaping' of their project ideas.
- The Accelerator gave the most innovative, smart ideas the chance to come to the fore.

Recommendations and Next Steps

If the Accelerator model were to be used again in Scotland, or transferred to other contexts, the approach would benefit from:

- Operating under a longer time-period to accommodate the slightly different time scales and needs of the participating projects;
- Introducing a pipeline of potential project ideas to enable projects at all stages in development to benefit from the Accelerator; and
- Long-term funding to allow the Accelerator to restart every 24 months.

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[1] 'Smart' in this context means the *'process, or series of steps, by which cities become more "liveable" and resilient and, hence, able to respond quicker to new challenges'* (BIS 2013, p. 7). This process *'brings together hard infrastructure, social capital including local skills and community institutions, and (digital) technologies to fuel sustainable economic development and provide an attractive environment for all'* (BIS 2013, p. 7).

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1. Introduction

1.1. The Smart Accelerator

The Smart Accelerator project was an active support service. It helped transition Smart[2] city, community and sustainable island projects in Scotland from the concept stage to the point of being investable. The Accelerator was implemented as a European Regional Development Fund (ERDF) partnership project worth £1.2 million. It was led by the Edinburgh Centre for Carbon Innovation (ECCI), and supported by the Scottish Government, Transport Scotland, the Scottish Cities Alliance, Scottish Enterprise and Highlands and Islands Enterprise. The approach was implemented from October 2013 to May 2015 supporting eight Smart City, three Sustainable Island and three Smart Mobility projects.

The vision was to transition project ideas, which focused on the unique combination of mobility, low-carbon and innovative technology, to fully developed, investable project partnerships. It was envisaged that the projects would, once fully operating, serve as exemplars of collaborative business models for low-carbon Scottish localities of the future. To enable the transition from project ideas to investable projects the Accelerator used various proactive processes, such as establishing business relationships and sharing best practice.

'We wanted to create better quality projects that move from being dependent on funding to independent projects.' Smart Accelerator Team

The Accelerator focused on project partnerships that support Scotland's transition to a low carbon economy but worked closely with international actors across Europe to stimulate international knowledge exchange and competitiveness. In turn due to its unique approach, the Accelerator has gained international attention from public sector organisations, and it is hoped that with the help of this report the approach can be easily applied by other organisations worldwide.

1.2. Purpose of the Research

This report examines how a specific configuration of key support processes can help selected smart cities, communities and islands ideas to transition to fully investable project partnerships. The report:

- sets out the key processes of the Accelerator;
- looks at the participants' and organisers' experience with the Accelerator;
- examines the impact of the Accelerator on funding support; and
- recommends ways to improve the Smart Accelerator.

2. Methodology

The process evaluation is based on qualitative research methods. We conducted 14 one-to-one semi-structured interviews with individuals coming from three groups: the Accelerator's delivery team, the Accelerator's steering group and the Accelerator's project participants. The interviews were fully transcribed. Qualitative data was also collected from documents related to the Accelerator including project feasibility reports and consultancy reports. We then analysed the data from the interview transcripts, field notes, and documents through a combination of content and discourse analysis.

[2]'Smart' in this context means the *'process, or series of steps, by which cities become more "liveable" and resilient and, hence, able to respond quicker to new challenges'* (BIS 2013, p. 7). This process *'brings together hard infrastructure, social capital including local skills and community institutions, and (digital) technologies to fuel sustainable economic development and provide an attractive environment for all'* (BIS 2013, p. 7).

3. Findings

This section discusses the research findings. The findings have been structured into the following four sections:

- Key Processes of the Accelerator
- Benefits of the Accelerator on the participants
- Ways in which the Accelerator maximized opportunities of funding support
- Suggested improvements to the Accelerator

3.1. The Key Processes

The Accelerator was delivered through four key processes, which we describe here as: Identification, Shaping, Assessing Feasibility and Sharing. These processes were initiated at different stages of the Accelerator but remained active throughout the implementation period. These key processes were crucial for the successful implementation of the Accelerator. They are an accumulation of advice and practical support. Each process is detailed below.

3.1.1. Bespoke Identification

The Accelerator aimed to identify and support a minimum of 12 project ideas. The Accelerator team actively contacted ECCI's and the steering group's formal and informal business networks, academic institutions and Scottish businesses. The ECCI website was used to solicit project ideas and media articles were published in magazines and newspapers. A standard application form was developed to enable the team to capture the relevant information for each project. Overall, the Accelerator sought project ideas from:

'We had the ability to attract a wide range of ideas and make them feel safe to work with us.' Smart Accelerator Team

- Organisations represented on the steering group
- Organisations that had previously worked on topics related to the Smart theme
- ECCI's existing contacts with the public and private sector
- Academic institutions across Scotland
- The wider public (e.g. placing advertisements on the ECCI's website and releasing press releases)

282 project applications were received. The Accelerator team short-listed the most suitable project ideas based on a structured evaluation, which assessed each project on its alignment with: international application; sustainability; proven technology; investability; economic development; and, EU funding potential (see appendix for the criteria). The specific details of this structured evaluation are detailed in the report 'Accelerator Project Evaluation: Lessons Learnt'[3].

The purpose of the structured evaluation was to find projects that were innovative and had ideas that set them apart from the majority of applicants. In the first filter of the project list, cancelled projects, projects which had already received funding and ones which fulfilled criteria that matched with existing funding streams such as the Green Investment Bank were removed. Project ideas which were similar were approached and asked to consider combining to create a more feasible project. Finally the top scoring projects on the evaluation criteria were invited to complete a more detailed application form and attend a panel interview. The short-listed projects were then evaluated by the Accelerator team, who recommended to the Steering Group the final 17

[3] Reid, A. (2014). Smart Accelerator Project Evaluation: Lessons Learnt. A report for ECCI. December 2014

projects to select, of which 14 project ideas participated until the end of the Accelerator's implementation period.

3.1.2. Shaping

The project ideas were shaped into independent project partnerships by encouraging and enabling innovation and making connections.

Firstly the project participants were encouraged to think 'outside the box' i.e. to think creatively, critically and practically about their project ideas. The Accelerator team and the participants talked through the project ideas from initial idea to potential implementation. The team specifically questioned the participants about whom their idea was targeted at and which Smart technology they were aiming to deliver. Consequently, project participants had to consider and re-assess whom they could and should be partnering with. Local councils, Small and Medium Sized Enterprises[4] (SMEs) and other local organisations were brought into consideration. Taking a critical approach to thinking about the projects continued throughout the implementation of the Accelerator and helped the participants to identify gaps and unthought-of opportunities.

The Accelerator team also proposed combining project ideas that were similar in concept, locality and technology to create bigger, more sustainable project partnerships. There were for example several project applicants from Orkney who wanted to explore how renewable energy sources could be used to power low carbon vehicles. The Accelerator team matched those different applicants together and a new combined project was formed as a result. Projects were also matched with a view to compliment each other's work. For example, the Accelerator team enabled cooperation between the project Mobility Scheduling, which calculated low-carbon delivery routes based on mathematical algorithms, with the Green Transport Hub, which set up a physical demonstration centre for low carbon vehicles, and the Mobility Integration Living Lab (MILL), which aimed to make the city itself an innovative Living Lab environment.

As part of the Shaping process, a consultancy was commissioned to identify SMEs that could work with the projects. This company produced an easily accessible database of 130 suitable local, national and international SMEs. From this list, 1 to 10 SMEs were selected to be a potential match for each participating project. This work was conducted at the start of the project support to enable SMEs to help shape the projects instead of joining the project once they were firmly structured.

Secondly, once potential partners and supporters were identified, the Accelerator team helped to develop the relationships that were needed to establish these partnerships and to gain their support. The unique professional experience of the Accelerator team allowed the participants to quickly connect with those partners across local authorities, Smart cities, islands and communities.

3.1.3. Assessing Feasibility

Alongside identifying suitable project ideas and shaping them, some of the projects were provided with a financial grant to commission business cases or feasibility studies.[5] Participants themselves decided whether an external consultant or an expert within the participant's organisation would complete this feasibility study. Some of the project ideas were complex and/or very technical so that specialist consultants from within those fields were consulted. The Accelerator team was asked to help evaluate some of the tenders due to the specialist technical expertise within the group.

[4] SMEs are defined as *'enterprises which employ fewer than 250 persons and which have an annual turnover not exceeding EUR 50 million, and/or an annual balance sheet total not exceeding EUR 43 million'* (EU Commission 2003: 39).
[5] Some of the projects were also part of the Smart Mobility Challenge and were therefore not given any financial support through the Smart Accelerator to commission the feasibility studies.

To ensure the development of robust feasibility studies the Accelerator team remained in close contact with the projects, reviewing work on a regular basis and providing feedback and direction. This ensured that the projects continued to shape their ideas and consider the broader implications and ideas gained from global and academic best practice. Once the feasibility studies were completed the Accelerator team invested time to review the studies and provided practical advice on how to revise the project ideas to ensure that they had the highest possible chances to attract follow-on funding and to be implemented.

3.1.4. Sharing

The fourth process was Sharing: sharing relationships and sharing best practice.

Sharing of Relationships

'It's good to have met and seen with your own eyes what this small city in Scotland can do, or what that was like in Denmark.' Smart Accelerator Participant

The Accelerator team established (often personal) relationships with individuals from the organisations identified during the Shaping process. Using such social networks significantly sped up partnership building and gaining access to permissions and/or resources. This is based on the fact that people who are better connected through social capital are able to perform better.[6] Additionally, project participants were put in touch with each other to form relationships across their project ideas. A LinkedIn group was for example set up for the project participants to have a means to connect and to share information. The participants were also given the opportunity to network during events hosted by the Accelerator team. This informal structure worked well for the participants to share best practice, experiences and contacts. It also allowed the participants to identify opportunities for working together in the future. In fact many of the participants are still in contact with each other and are working together on other projects.

Sharing of Best Practice

'There are fantastic opportunities out there to create Smart and Smarter projects and if you create the right process you can effectively and quickly gather those ideas.' Smart Accelerator Team

The Accelerator team enabled the sharing of international best practice through bespoke international site visits. To do so the Accelerator commissioned an external consultant to identify Smart city, community and island projects across the world that were similar (e.g. in using low carbon technologies) to the project ideas enlisted to the Accelerator. This team identified:

- international contacts with individuals and organizations working on similar projects;
- lessons learnt by those individuals and organizations; and
- international experiences on how to accessing funding.

These key findings were summarised in a report individually tailored for each of the Accelerator projects, detailing how to practically progress their project partnerships. The team and the participants were then encouraged to learn and think about similar and applicable solutions during visits to Copenhagen, Hong Kong, Berlin and Barcelona. Through networking with the project leaders from these sites participants learned which

[6] See: Burt RS 2000. The network structure of social capital. *Research in Organizational Behavior* 22: 345-423. http://dx.doi.org/10.1016/s0191-3085(00)22009-1; Putnam RD 1993. The prosperous community. Social Capital and Public Life. *American Prospect* 4: 13.

activities, partnerships and technologies work well for the implemented projects, and which do not. In addition the visits offered opportunities to:

- Familiarise themselves with new technologies;
- be inspired to think beyond their current project; and,
- learn from the mistakes and opportunities that other organisations, public sector bodies and businesses have experienced across the world who openly shared their misadventures and positive outcomes.

Some participants are still in close contact with the project leaders from these international sites and are continuing to share their knowledge and experience. Some even (aim to) partner with each other. The Mill project for example received free advice from the City of Copenhagen on how to implement district heating. In addition to this bespoke international learning experience, the Accelerator team shared knowledge and experiences from their own previous work related to smart city developments. The team for example trained participants on how to write business plans and on how and where to apply for funding. They also advised on the marketing of individual project ideas, shared experiences that they had gathered through work on similar projects in the past and were open to sharing their personal contacts.

> 'The trips and knowledge exchange is what you would not get otherwise. The trips were fascinating and very useful. I was in Copenhagen where 90% of the city is heated through district heating. I learned how that works and how it is structured into council fees etc. I would not have had that knowledge exchange experience without this program.' Smart Accelerator Participant

Participants were also provided with academic best practice reports prepared by Edinburgh Napier University, which identified current research in the different fields of Smart cities, communities and islands.

3.1.5. Learning

The above description of the four key processes *Identification*, *Shaping, Assessing Feasibility* and *Sharing* implemented through the Accelerator shows that the Accelerator developed a bespoke approach to help transition unique Smart city, community and sustainable island ideas. The processes are summarized in Figure 1.

Overall, our research suggests that the four key processes allowed the participants to make use of economies of scale: the diverse resources that smart project ideas would normally need to develop would have been difficult to access for most of the project participants e.g. visiting international sites or communicating with other Accelerator projects that are already implemented successfully. Having a cohort of 14 projects in a similar field of interest made it possible for the project participants to access such resources.

Our research also shows that creating and maintaining relationships was crucial for the success of the Smart Accelerator. These included relationships with:

- the project team;
- potential partners and supporters;
- existing and successful Smart projects; and
- amongst the participants.

Local relationships built at the start of the projects helped to shape the project ideas into feasible projects. The participants highlighted the benefit of having a project team with connections to authority figures and whose help could be sought throughout the lifetime of the project. The relationships established among the projects partners were also crucial to the success of the programme. Additionally, there were the relationships with individuals, organisations and communities that operate in Scotland and internationally to share best practice. Complementary to this, and also stretching over the entire implementation period of the Smart Accelerator, was the personal and individual relationship between the project participants and the project team. This was

the foundation on which the bespoke Accelerator approach to transition Smart ideas to Smart partnerships was built. Overall, the success of the four key processes implemented through the Accelerator was built on having sophisticated relationships with various individuals and organisations and across (international) projects, teams and participants.

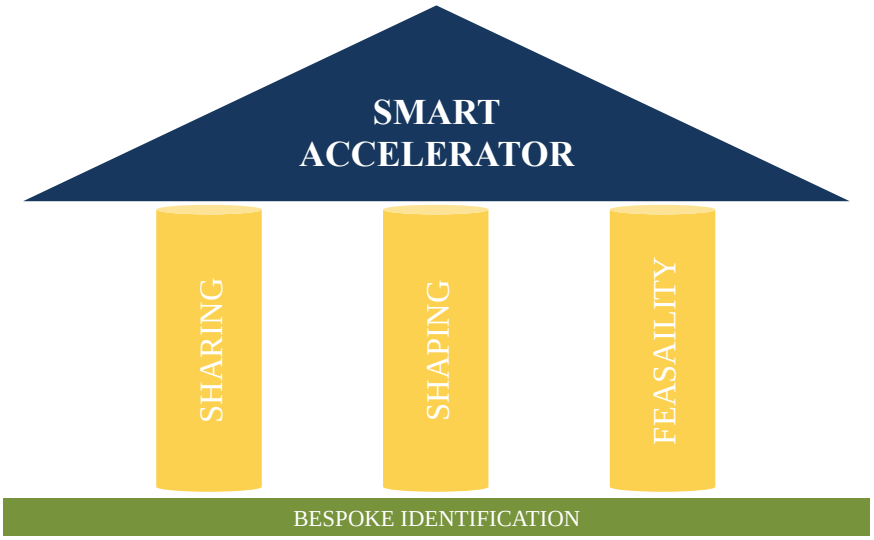

Figure 1: The Smart Accelerator

The Accelerator used processes that stretched over the entire project period as opposed to individual, fragmented development steps. This allowed the projects to develop organically and intuitively. Experience from this proactive engagement suggests that Smart project ideas need bespoke support that is different to the support provided by traditional project development tools.

3.2. The Participants' and Organisers' Experience with the Accelerator

'If we had just gone alone, "ah, who [do they] think they are?" or "who do you think you are getting off to trips to Denmark and Copenhagen? Why are you doing all this?".' Smart Accelerator Participant

The majority of project participants felt that their expectations of the Accelerator were fully met. Some of the participants had specific expectations and were interested in the funding support that they would receive to commission a consultant to assess the feasibility of their idea. Other participants had more general expectations and they joined the Accelerator with the aim of turning their idea on how to create Smart cities, communities and islands into practice. The participants felt they benefited particularly from the continuous shaping of their project ideas. This meant they had to consider and re-assess how to structure their projects, with whom they would partner and how to implement the idea. The participants felt that without this thorough analysis of their idea and its possible practical implementation, they would not have been able to create a feasible project partnership within 18 months. This is of particular importance as participants were often not project developers and many had very little experience in managing different partners across public and private organisations. Limited capacity to work on the Accelerator project, see below, was also a challenge.

Ideas and partnerships were developed throughout. Participants therefore perceived the Accelerator as a continuous service rather than as a project with individual steps and phases to complete. Being part of an interactive and continuous service helped them to progress at a pace and in a manner that suited them. The participants explained that they did not have to be concerned about meeting specific targets and were thus

able to integrate the Smart project into their day-jobs as and when they could. This was important because the majority of participants worked on the project as an addition to their full time job/role. Being in touch with the team on a regular basis and being able to access the four key Accelerator processes allowed the participants to make use of the support whenever needed and therefore helped them to stay inspired and to continue working on the project idea over a period of 18 months.

For some participants the funding that they received to commission the feasibility studies was significant for developing their project ideas. Innovative projects are often complex and the time frames involved in moving from idea to implementation are long. The complex partnership arrangements usually required for such projects, and the fact that benefits are uncertain and distant, means it is rare to find one organization prepared to fund a feasibility assessment. Being given the opportunity to access such a feasibility study was therefore crucial and the work would in the majority of cases not have happened otherwise. Additionally, the participants explain that they would not have been in a position to establish a comprehensive feasibility study over the short timeframe of 18 months by themselves. The Accelerator team helped participants gather important information - such as the partnerships and technological knowledge - needed for the feasibility study.

For the project participants it was also the support in 'making connections' to individuals of relevant public and private sector organisations that was important. The project ideas were based on the specific needs and infrastructures of entire cities, islands and communities and therefore needed the support of a range of specific (often region specific) organisations - local authorities, community representatives and other public sector organisations. Products and/or services of local companies were often needed to enable the participants to offer the Accelerator product or services in the future.

3.3. The Impact on Funding Support

The way in which the Accelerator utilized the full opportunities that funding support could potentially provide was by giving the most innovative Smart ideas the chance to come to the fore. The Smart Accelerator team explained in interviews that the most innovative Smart ideas do often not get the chance to develop into sustainable partnerships. Often the more well established groups who have had experience in funding applications and have more prepared material and case studies win funding rather than the individuals with great ideas who are unclear and unsure how best to articulate them. They have the necessary partnerships and relationships in place to convince funding providers who look to overcome the challenge of implementing innovative solutions which are often tied to the complex, interconnected economic, environmental and social realities of specific localities. Traditionally, as explained by the steering group and project team in the interviews, a private or public sector organisation has an innovative solution in the quest to create 'smarter' localities. These solutions are often very much based on the capacities and capabilities of the organisation or individual that is proposing the idea. Localities such as cities, communities and islands are in their nature made up of networks of multiple public and private sector stakeholders representing multiple interests. Smart city, community and island ideas require a unique partnership of as many of such relevant stakeholders as possible. Making 'smart', low-carbon technologies relevant to this multitude of interests is a challenge. Organisations proposing the innovative, Smart ideas often do not have the know-how or the capacity to address the interests of all relevant stakeholders. Consequently, the organisations which have highly innovative ideas for the Smart challenge lose out when applying for financial support such as grants against already established organisations which might not have as highly innovative ideas.

Interviewees also suggested that the Accelerator bridged the disconnect between the allocation of current funding support and finding the best Smart solution for the relevant locality. The Identification process was unique as it viewed the ideas and their associated organisation in relation to each other and in relation to existing Smart projects in Scotland. This brought to the fore Smart solutions that might have remained as ideas without the support of the programme. This approach avoided both (i) receiving ideas that were already well developed and (ii) attracting applications from individuals, businesses and organisations that develop ideas based on funding calls to maintain their organisation's survival. This altered the dominant practice of funding

and support mechanisms that advantage organisations that develop projects for the sake of gaining funding and which have established relationships with funding providers.

3.4. Ways to Improve the Approach

3.4.1. Ensure Partnerships with SMEs

The processes of *Shaping* and *Sharing* sought to link project participants and their ideas with local, national and international SMEs (see section 3.1.4.). Therefore an easily accessible database of suitable local, national and international SMEs was established which identified SMEs that could work with the individual projects. There were however no existing relationships that linked these SMEs to the individual projects participants and the participants therefore did not use the list because the responsibility was on them to establish a working relationships with the SMEs. Most of the project participants therefore explained in the interviews that the Accelerator team should have supported the SMEs and the participants in building trustful relationships with each other. In this respect it is important to note that the list of potential SMEs was submitted before the individual projects had been fully 'shaped'. Thus making it challenging to create a working relationship between the SMEs and the participants.

- **Potential SMEs should be selected after the individual projects have been appointed to the Accelerator and these SMEs should also formally commit to participating within the Accelerator.**

3.4.2. Substitute Academic Support with Technological Expertise

The Accelerator provided each project with an 'academic report' in which a team of academics identified and summarised the latest academic findings on the developments of Smart cities, communities and islands. None of our interviewees identified this academic best practice as relevant to their development within the Accelerator. There was little to no connection between the academic report that had been created and the actual execution of the project ideas. It is therefore recommended that this activity should be removed from the programme in the future to save time, effort and resources. However, many of the interviewees expressed that the individual project ideas would have benefitted from having access to, and interaction with, experts from the field of Smart technology. This is because the technologies involved in the Smart ideas were often very novel and technically challenging. All of the project ideas for example focused on Smart technology and low carbon, both highly innovative and fast-changing industries. Some of the questions included, for example, how excess energy can be used to power electricity cars or how to use mathematical algorithms to establish low-carbon delivery routes. Neither the project team nor the participants had sufficient knowledge in these specialised fields and were often challenged to think beyond their own knowledge and expertise when it came to identifying how to access and implement these technologies.

> 'We don't have the resources to monitor and maintain those relationships. We are not funded to continue this work. You have to rely on the individuals to carry the relationships through.' Smart Accelerator Team

- **The academic best practice should be replaced with technological best practice. This should consist of a recruited team of 2-4 technological experts who have time allocated per month to interact with the Accelerator participants. The technological experts should participate in the main meetings of the Accelerator and be available to the project participants if questions arise hereafter. This technological team would also help to identify suitable technologies and provide feedback on the practical implementation of such within the overall project partnerships.**

3.4.3. Lengthen the Timeframe and Add Funding Support

A number of the project participants expressed the view that the Accelerator should have continued for another (approximately) three months, saying that they had not yet applied for funding by the time the project ended. Helping the participants apply for funding was not part of the Accelerator's remit. Nevertheless, evidence suggests there is a need to receive support in identifying and applying for funding opportunities. Some participants explicitly stated that they did not know how to proceed after the Accelerator was completed. To support the participants with their development after they have received their feasibility studies and benefited from the other three key processes, it is recommended that:

- **Participants should receive advice as to how (or not) to proceed with their project partnerships after they have received their feasibility studies and benefited from the other three processes in the Accelerator. Each feasibility study should recommend if and/or how the project partnership should be continued and how to access sources of funding. Advice of this nature is crucial as most of the participants reported limited knowledge about accessing potential funding sources. To act upon these recommendations of the feasibility study each participant should have a final consultation with the Accelerator team.**

- **The programme should be implemented over a period of 24 months instead of 18 months, which would provide more time to shape and develop the project ideas, identify suitable funding opportunities and to come to a decision once the feasibility studies are released.**

3.4.4. Formalise the Commitment of the Steering Group

The members of the Accelerator team, as well as of the steering group themselves, described the steering group's commitment as challenging. The steering group consisted of representatives from the funding organisations including the Scottish Government, Transport Scotland, the Scottish Cities Alliance, Scottish Enterprise and Highlands and Islands Enterprise. The steering group was responsible for deciding on and overseeing the key processes and decision-making within the Accelerator programme. However, the agreement of the individual steering group members to provide match funding was only formalised once the Accelerator was implemented. This was challenging because some of the steering group members had already developed their own ideas on the shape and format of the Accelerator. Therefore, once the Accelerator commenced operation some of the representatives were unsure if they could or indeed would want to provide match funding for the proposed project and this required significant discussions to ensure the Accelerator proceeded. The commitment of the steering group members was also perceived to be low and members themselves had difficulty committing to regular group meetings.

- **The formal agreement of the role and remit of the steering group and the match funding arrangements should be in place before commencing any future programmes.**

3.4.5. Follow Up

The proposed improvements indicate that the Accelerator would have benefited from a follow-up phase for the recently completed Accelerator projects. There could for example have been a follow up meeting with the 14 project participants and the Accelerator team to assess the development/success of each project and to what extent the Accelerator helped to achieve this development/success. The Accelerator team could have met with each individual project team and discuss the feasibility studies and the current situation of the project ideas. The discussion could then reach conclusion as to whether the project is worth pursuing. Additionally, the team could usefully have been resourced to provide recommendations on how participants could gain additional financial support.

3.5. How can the Accelerator be Transferred and Replicated?

To replicate and sustain an Accelerator, and to accommodate the slight variation in time scales and funding needs of distinct project participants, it is recommended that Accelerator initiatives should restart every 24 months. In this way, projects that are not yet ready to independently apply for funding would still be able to access the bespoke Accelerator support. This recommendation assumes that there is a continuous pipeline of Smart ideas that move from project ideas to project partnership. To enable this, innovative projects would have to be identified on a regular basis and a constantly refreshing pipeline of ideas would have to be maintained. For example, based on that pipeline of project ideas, ECCI could regularly call for some of the projects to come forward if they target a particular Smart area such as 'mobility' or a particular locality. The Accelerator could then exist as an approach independent from specific Smart projects and the Accelerator could be sustained. Replicating and sustaining this approach regularly needs a consistent source of funding.

4. Conclusion

The Accelerator boosted the development of major Smart city, community and sustainable island projects through introducing four key processes: Identification, Shaping, Assessing Feasibility and Sharing. These tools were implemented at different stages of the programme, and once introduced stretched throughout the programme period. These four key processes are crucial to the success of the Accelerator, and form an accumulation of advice and practical support.

The Accelerator developed a bespoke approach that fitted the unique characteristics of Smart city, community and island projects. The focus was to transition project ideas into independent project partnerships from organisations and individuals that (mainly) have little knowledge on how you transition project ideas to feasible project partnerships. Smart project ideas benefit from bespoke support that is different to the support traditional project development tools can provide.

The research clearly shows that creating and maintaining relationships was the key factor for the success of the Smart Accelerator. These included relationships with: the project team; potential partners and supporters; existing and successful Smart projects; and, amongst the participants. Overall our research shows that the success of the four key processes implemented through the Accelerator was built on having sophisticated relationships with various individuals and organisations and across (international) projects, teams and participants.

5. Appendix

5.1. Evaluation Criteria

The evaluation criteria considered for the identification of the projects that became part of the Accelerator can be seen in Figure 2.

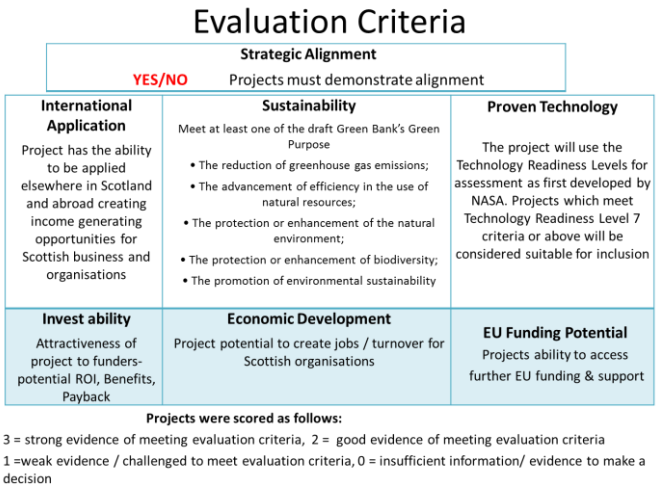

Figure 2: Evaluation Criteria for the Identification of Participating Projects[7]

5.2. Participating Projects

The participating projects are listed below based on the ECCI's Accelerator booklet 'Identifying and accelerating innovative smart cities and sustainable islands projects'.

5.2.1. The Green Transport Hub

- Idea: Creating a one-stop-shop for information gathering, sharing and demonstrating technologies and products related to alternative fuels and transportation.
- Aim: To create a commercially viable smart mobility demonstration centre in Scotland to showcase low carbon transport and alternative fuels in order to change consumer behavior and accelerate the move away from fossil fuels in Scotland.
- Location: Scotland
- Project lead: John Curtis, Revolutionall
- Preliminary stakeholders: Transport sector, smart car sector, EV business/commercial sector, manufacturers, SMEs engaged in transport delivery, councils and local authorities, community groups engaged in mobility issues.

5.2.2. Greening the Falkirk Wheel

- Idea: Create a world-class visitor attraction which has a zero carbon footprint and an innovative Stakeholder Investment Model.
- Aim: A Scottish demonstrator project for other visitor centres with green ambitions.
- Location: Falkirk, Scotland

[7] Reid, A. (2014). Smart Accelerator Project Evaluation: Lessons Learnt. A report for ECCI. December 2014

- Project lead: Gordon MacDonald, Scottish Canals
- Preliminary stakeholders: Scottish Canals – organisation and employees, Falkirk Council and community, green tourism sector, energy and renewables sector, site visitors, Scottish Enterprise.

5.2.3. Linlithgow Community Energy

- Idea: Create community energy independence, through a programme of interventions, while creating a simple financial, legal and business model.
- Aim: Create a replicable business and financial model for community energy independence which can be used by other communities and councils.
- Location: Linlithgow, Scotland
- Project lead: Chris Cook, Transition Linlithgow
- Preliminary stakeholders: Linlithgow Natural Grid, West Lothian Council, Linlithgow residents and community, Mainstreaming Innovation Network, Scottish Environmental Technology Network, investors and energy suppliers.

5.2.4. Residential Thermal Imaging

- Idea: Measure the impact of a targeted energy efficiency drive across 6,000 residential and commercial properties in a single city.
- Aim: Create a replicable impact measurement process and community engagement approach to improve domestic energy efficiency.
- Location: Aberdeen, Scotland
- Project lead: Kevin Christie, Aberdeen City Council
- Preliminary stakeholders: IRT Surveys Ltd, Aberdeen City Council, SCARF, local homeowners and residents.

5.2.5. Shawfair Low Carbon New Town

- Idea: Developing the potential of a brand new town to showcase the use and provision of renewable energy and a sustainable energy infrastructure.
- Aim: Create a replicable solution that demonstrates building intelligent infrastructure into a community from the ground up.
- Location: Shawfair, Midlothian, Scotland
- Project lead: James Palmer, Buccleuch Property
- Preliminary stakeholders: Buccleuch Property, Mactaggart & Mickel, Midlothian Council, SEPA, Zero Waste Scotland, Scottish Government, Transport Scotland, NHS, research institutions including the University of Edinburgh, Queen Margaret University, Edinburgh Bioquarter energy providers, local community including homeowners, tenants, businesses and future residents.

5.2.6. Intelligent Street Lighting

- Idea: Explore the potential for introducing additional functionality to street lighting columns and associated infrastructure.
- Aim: Create a replicable solution for controlled, sustainable public lighting with electric car charging and public Wi-Fi service built into the light column.
- Location: Glasgow, Scotland
- Project lead: Jonathan Brown, Glasgow City Council, Peter Devine, Glasgow City Council
- Preliminary stakeholders: Glasgow City Council, Glasgow University, area communities and residents, intelligent street lighting sector.

5.2.7. The MILL (Mobility Integration Living Lab)

- Idea: Create a 'living lab' that will develop, nurture and promote smart mobility integration projects. Using the city of Dundee as a real-life test and experimentation environment for mobility solutions - encompassing new and existing technologies, business and engagement models, and regulatory frameworks that address mobility challenges.
- Aim: Demonstrator project which represents Scottish low carbon ambitions among other 'living lab' models and helps position Dundee as a burgeoning smart city.
- Location: Dundee, Scotland
- Project lead: Neil Gellatly, Dundee City Council
- Preliminary stakeholders: Urban Foresight, IBI Group, transport sector, smart car sector, EV business/commercial sector, vehicle manufacturers, local authorities, community groups engaged in mobility issues, SMEs engaged in transport delivery, local bus, taxi and car hire operators, Dundee communities and residents.

5.2.8. Tay Eco Valley and Zero Emissions Network

- Idea: Create a Zero Emission Transport Demonstrator and use the River Tay and water heat pumps to provide low cost and renewable energy to a business park, housing, schools and public buildings.
- Aim: Create replicable living lab solutions maximising the benefit of renewable heat generation and use of low or zero emission fuel transport.
- Location: Tay Eco-Valley, Perth City Region, Scotland
- Project lead: Serge Merone, Perth & Kinross Council
- Preliminary stakeholders: Perth & Kinross food and drink businesses, transport sector, energy suppliers, local residents and the community.

5.2.9. Orkney's Electric Future

- Idea: Develop the potential for electric vehicle rollout in the Orkney Islands – using the island context to create a sustainable example of a 'living lab' for smart mobility based on renewable energy.
- Aim: Create a replicable electric vehicles solution that can be used as a demonstrator and rolled out to other island communities nationally and abroad.
- Location: Orkney, Scotland
- Project lead: Laura Cromarty, Orkney Islands Council
- Preliminary stakeholders: Orkney Islands Council, residents and communities, car hire, taxi and bus operators.

5.2.10. Stornoway Low Carbon Hub

- Idea: Explore potential hydrogen generation opportunities arising from local, renewable energy sources and the matching demand for transport, heat and storage.
- Aim: Create a replicable, scaleable solution for stored renewable energy use.
- Location: Stornoway, Isle of Lewis, Outer Hebrides, Scotland
- Project lead: David MacLeod, Comhairle Nan Eilean Siar
- Preliminary stakeholders: Comhairle nan Eilean Siar, Community Energy Scotland, Lews Castle College

5.2.11. Sustainable Harbours

- Idea: Explore the possibilities for a sustainable harbour environment that makes use of wave or tidal energy. Produce a blueprint for future small harbour redevelopments.

- Aim: Create a replicable solution that can be rolled out to other small harbour environments, in Scotland and internationally.
- Location: Brodick Harbour, Isle of Arran, Scotland
- Project lead: Lorna Spencer
- Preliminary stakeholders: CMAL (Caledonian Maritime Assets Ltd), Isle of Arran residents and community, tourists and visitors, renewable energy generators and developers.

5.2.12. Demand Responsive Transport (DRT) Integration

- Idea: Develop a simple, single DRT system for use by Scotland's councils, community groups and the voluntary sector.
- Aim: Develop a single DRT system for whole of Scotland providing better, more effective and efficient access to transport and mobility for service users.
- Location: Test case TBC, Scotland
- Project lead: Emma Gilbert, Transport Scotland
- Preliminary stakeholders: Local authorities, community groups and volunteer organisations, Transport Scotland, Scottish Government, Scottish Enterprise, transport operators, user organisations, systems developers and service suppliers.

5.2.13. Smart City Mobility IQ

- Idea: inexpensive, low carbon, flexible transport information system that works with existing mobility infrastructure.
- Aim: Create a low carbon and efficient infrastructure as one core component of an intelligent mobility solution serving individuals and operators.
- Location: Scotland
- Project lead: Graeme Scott, IBI Group
- Preliminary stakeholders: IBI Group, local authorities, Scottish Government, research institutions and universities, local communities and transport users, transport delivery and infrastructure sector.

5.2.14. Mobility Scheduling and Optimisation

- Idea: Create a web based, scalable mobility scheduling tool with accompanying mobile app for use on the go, based on proven optimisation algorithms and desktop scheduling application.
- Aim: Accessible, online technology for public and private sector fleets as well as individual consumers to identify the best low carbon mobility solutions.
- Location: Test case TBC, Scotland
- Project lead: Emma MacLean, Route Monkey
- Preliminary stakeholders: Route Monkey, local authorities, community groups, businesses, individual consumers, private and public sector fleets, Scottish Government, Scottish Enterprise, transport delivery sector and SMEs, manufacturers.