



1. Name of Governmental Department or Agency
Reform Division, Department of Public Expenditure and Reform
2. Title of the Project
Distributed Ledger Technology – Identifying and Solving Public Service Problems Using the Blockchain.
3. Description of the Project
<p>The Department of Public Expenditure and Reform (“DPER”) is responsible for the implementation of Our Public Service 2020, the framework for the modernisation of the Irish Public Service. A core commitment in this framework is to pilot new approaches, apply managed risk-taking and employ different delivery models (see Action 6, www.ops2020.gov.ie).</p> <p>Distributed Ledger Technology (“DLT”) would appear to have excellent potential to solve public service problems, especially in areas where trust and verification of data or transactions is required. However, understanding why this technological solution surpasses other technology solutions remains a source of debate.</p> <p>The Department of Public Expenditure and Reform is eager to advance emerging technologies to solve problems faced by our citizens and to modernise public service organisations. The Department is especially keen to explore using the most suitable technology solution to solve a particular problem.</p> <p>Having regard to the foregoing, the Department would like to engage an expert technologist in the area of distributed ledger technology to undertake a review of current and potential problems facing the Irish Public Service Bodies. The Department is particularly interested in understanding how it could target and solve (or significantly alleviate) problems using DLT. This would include examining how some current processes are managed and/or understanding how they could potentially be executed better using distributed ledger technology as a solution to generate efficiencies or remove burdens from public service bodies (and consequently allow staff to focus on other work).</p>
4. Project Scope
<p>It is proposed that the expert technologist would be expected to:</p> <ul style="list-style-type: none">• Work closely with officials from the Department of Public Expenditure and Reform to source proposals from Irish Public Service Bodies concerning potential DLT pilots using an expression of interest methodology. The proposals that are sourced will seek to solve an existing or future problem for a Public Service Body.• Conduct information sessions that explains DLT, as a technology, into an accessible and comprehensible solution and clearly delineates its benefits and drawbacks as a solution. The technologist may also be required to enhance the current <i>‘Guide to Blockchain for</i>



Public Servants' that has been prepared by the Department of Public Expenditure and Reform.

- Working from literature and established research, and having examined proven examples of implementation around the world, identify work areas of the Irish Public Service where DLT could be used to improve the current offering or prevent or alleviate a future problem.
- Work with members of DPER's team to identify policy and process owners around the public service and to brief identified appropriate officials on this technology with the end-goal being to encourage participation in the process of long-listing and short-listing potential pilots for DLT execution in the Irish Public Service.
- Review propositions from Public Service Bodies for DLT to be used a solution to a particular problem. This would include examining and understanding a current process that is being delivered in a substandard fashion or examining a situation that has given rise to a problem that exists and in both cases determining whether DLT can improve the situation.
- Conduct analysis on the current data sources, structure, fields and the process (or proposed sources, fields, processes) around the challenge or potential challenge.
- Identify initiatives or projects that would be deemed unsuitable for piloting on the grounds of current data or process readiness but also issues around GDPR or data sensitivity for individual members of the public.
- Compile a long list of processes that would be considered suitable for piloting on the basis of the expertise of the technologist. Clearly explain why these are suitable initiatives. Clearly explain dependencies and critical success factors for each suitable initiative.
- Recommend and rank a shortlist of projects to move to piloting in the Irish Public Service
- Conduct a proof of concept of *one or more* of the recommended and ranked challenge areas using an appropriate DLT tool.
- Produce case studies in relation to proofs of concept that are accessible and understandable for public servants.
- Identify key enablers and barriers that exist in relation to rollout of DLT as a solution in the Irish Public Service (potentially using a standard PESTEL analysis).
- Produce a report on the work outlined above with recommendations for the Government to further pursue, or not to pursue, DLT as a suitable solution in solving public service challenges.

5. Skills/Expertise Required

The candidate should have relevant qualifications in the area of Computer Engineering, Computer Science or a related field, with a track record of research in DLT.

The candidate must be an independent researcher willing to take a leadership role in the group and be able to influence and work with key decision-makers and policy architects.

The ideal candidate will have a background in the DLT and/or computer science and cryptography. The candidate should be well-organised and self-motivated with the ability to manage the day-to-day running of a research project, to identify research objectives and to carry out appropriate research activities within a given timescale.



Knowledge & Experience (Essential & Desirable)

2+ years' research experience

Excellent oral and communication skills, including the proven ability to write in English at a suitable standard for the preparation of written reports, publications and presentations of the work at generalist and specialist levels, including discussions with policy specialists and experts in different fields.

Desirable:

An established track record of publication in leading journals/conference, on relevant topics.

6. Expected Outputs of Project

The expected output of this project is:

- A long list of challenge areas where the Irish Public Service can use DLT to solve current or emerging problems
- A ranked and reasoned shortlist of projects for the Irish Public Service to pursue outlining considerations and the rationale for ranking/prioritisation
- A proof of concept or a small number of proofs of concept showing DLT as an appropriate solution
- Case study(ies) relating to POCs conducted
- A report to the Minister for Public Expenditure and Reform on the outcome of the research and analysis conducted and associated recommendations. This report may be used as a basis for a business case to pilot DLT for Irish Public Services.

7. Working Arrangements

The researcher would be based in the offices of the Department of Public Expenditure and Reform at St. Stephen's Green House, Dublin 2. Flexible and remote working arrangements will be accommodated.

8. Expected Timeline

- It is expected that this project could be completed within 6-12 months working on a full-time basis or 12-24 months on a part-time basis.