

CASE STUDY

# The Open Data economy: promoting digital innovation in Dublin

URBACT II



**The Open Data economy:  
promoting digital innovation in Dublin,  
URBACT II Capitalisation, April 2015**

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# FOREWORD

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This case study is part of a bigger capitalisation initiative set by the URBACT programme for 2014–2015 with the objective to present to cities local good practices about:



**New urban economies**



**Jobs for young people in cities**



**Social innovation in cities**



**Sustainable regeneration in urban areas**

These four topics have been explored by four URBACT working groups (workstreams), composed of multidisciplinary stakeholders across Europe such as urban practitioners and experts from URBACT, representatives from European universities, European programmes and international organisations working on these issues.

The case study on Dublin (Ireland) is one of the concrete results of the URBACT workstream ‘New urban economies’, after collection of data, a study visit, and interviews with local stakeholders.

It explores the practice the city put in place to boost its local economy, actions implemented, achievements and challenges, success factors, and conditions for transfer to other cities. The first part of the case study summarises the key points of the practice, while the second part (analytical template) provides more details for those interested in transferring the practice to their local context.

*We hope this shall be an inspiration for you and your city!*

**The URBACT Secretariat**

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# THE OPEN DATA ECONOMY: PROMOTING DIGITAL INNOVATION IN DUBLIN

 By Luís de Carvalho and Willem van Winden\*

*Consider what could be the link between these three facts: One: Cities are increasingly 'producing' all sorts of data, both the data sets on their own activities that they have collected since the computer age began and new sources of data churned out by sensors that are embedded in buildings, roads, grids, buses, cameras and other devices. Two: most citizens now have a smartphone. Three: citizens ask for better services, and a more transparent and accountable government.*

The link is open data. In recent years, many cities have been launching open data initiatives: online platforms where urban data is made available and can be freely accessed by everybody. A key challenge here is to turn raw data (such as planning application data, transport movements, water flows) into useful applications that improve efficiency, quality and transparency of urban services. In the past city governments were not very good at this: data management and innovation is not their core business. So why not engage with citizens, universities and companies that are?

With this in mind, the city of Dublin set up Dublinked<sup>1</sup>. Through the Dublinked initiative, the city opens up data about public provisions,

promoting data-driven innovation and encourages new collaborations (between city departments, IT companies, research institutes). The aim is to design better services, solve different sorts of urban challenges, and, importantly, create new businesses along the way.

## Dublinked™

Compared with other open data initiatives, Dublinked has at least two specificities that make it distinctive. First, it explicitly combines a regular datastore with the promotion of an *innovation network*, involving businesses, researchers, governments and citizens and; second, it combines the release of conventional and 'easy' datasets with more complex (and potentially more valuable) data streams and live feeds. Moreover, Dublinked showcases new ways to involve large IT companies in open data projects while sticking to the initiative's principles of equal access.

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### PLANNING DUBLINKED

Dublinked was launched in October 2011, in the midst of the economic and financial crisis. But the first ideas emerged in 2008, when Dublin City Council

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\* Willem van Winden is co-ordinator and Luís de Carvalho core group member of the URBACT workstream 'New urban economies'

<sup>1</sup> <http://www.dublinked.ie>



(DCC) was actively considering new initiatives that could, as put by the former city manager, “contribute to an innovation-driven recovery while countering the grim mood in the city”. Around that time, many global IT companies were flocking to the city and showed interest in urban data solutions and analytics. One of them was IBM, a well-known North-American IT corporation. As explained by Dublin’s former City Manager, “IBM was considering to develop a smart city lab in Dublin and was particularly interested in having data on water, energy and transport [...]; this alerted us [DCC] for the potential behind our data, not only for IBM but for many other smaller businesses and researchers”.

Yet, the idea of bilaterally sharing data between DCC and IBM was soon abandoned because it would give privileged treatment to the company and go against a fundamental principle of open data – that of equal access. However, full outsourcing of an open data platform would also not be a solution. That would entail delays and complications due to procurement rules, and limit joint learning possibilities. Therefore, a more collaborative solution was chosen: an

innovation partnership was set up between DCC, IBM, three other local authorities in Greater Dublin Region (South Dublin, Fingal and Dún Laoghaire Rathdown), and the National University of Ireland Maynooth (NUIM). That was the start of Dublinked.

The participation of NUIM was crucial, with its strong track record in data analytics and innovation eco-systems. It also positioned Dublinked as something ‘in-between’ in the triple helix, outside the bureaucratic boundaries of the city councils yet not just serving the interests of a single firm. NUIM hosted the staff and received most of the total cash budget of Dublinked –

about €100,000 per year. This budget paid for data hosting, curation and event organisation – and NUIM also assumed its overall coordination. IBM took the backseat, supporting the back-office operations of Dublinked and solving data-related technical issues (through providing free consulting time). In this sense, on the one hand, IBM could learn from DCC

and NUIM in a pre-competitive, open innovation fashion; on the other hand, DCC and NUIM benefited from IBM’s technical knowledge and their input as well as helping to identify the most valuable datasets, to the benefit of Dublinked as a whole.

## STEPPING OUTSIDE THE COMFORT ZONE

It soon became clear that collecting and releasing data for Dublinked involved several technical, legal and cultural issues. As put by a former Assistant City Manager, “there was a significant can’t do feeling [...]; all the lawyers advised us to give up. For example, nobody knew who would become liable if we hosted data that could endanger privacy or reveal business secrets, let’s say, the amount of water flowing to Guinness’s brewery district”. Moreover, there was also resistance from data-owners. The former Dublinked Manager: “Some city department felt that opening the data could embarrass them, and that other people would pick up the holes”. And there were also multiple vested interests behind data ownership, “as owning data [was] still seen as having power”.

Different actions were implemented to tackle these challenges. First, Dublinked started with the low hanging fruit, that is, less ‘problematic’ datasets owned by the city council, preventing technical and legal hurdles (e.g. traffic volumes, air pollution, land use, drainage areas). Second, in order to release a higher and more relevant number of datasets, Dublinked covered the entire metropolitan area, releasing data from the greater Dublin region. In this way, Dublinked could simultaneously learn and show the benefits of open data that had been released by Fingal – a neighbouring municipality with an open data initiative that was already up and running. It also opened the possibility for users to access data beyond the municipal boundaries, which can be especially relevant for health, transport, planning, employment and economic data.

In 2011, a new ‘design-thinking’ unit within DCC – named ‘The Studio’ – was tasked to manage Dublinked, directly reporting to the City Manager. It was set up as a mixed team of librarians, planners, architects and designers, seasoned in user involvement methods. Supported by agile routines and strong communication skills, The Studio was able to establish co-operation with other units and speak to external data providers and users. The Studio was

**An innovation partnership was set up between DCC, IBM, three other local authorities in Greater Dublin Region (South Dublin, Fingal and Dún Laoghaire Rathdown), and the National University of Ireland Maynooth (NUIM). That was the start of Dublinked.**



important for the project's early implementation (e.g. collecting and preparing data), namely because open data was new to DCC, requiring a combination of knowledge management with a customer-oriented view and a risk-taking mind-set. In 2014, following a change of governance and organisational structures within DCC, The Studio as such was dissolved and Dublinlinked was reintegrated into the core Planning and Development functions of the city. The virtues of the new organisation model are yet to be seen, but The Studio was very important in the start-up years.

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## USER INVOLVEMENT

Beyond releasing data and waiting for innovations, a central feature of Dublinlinked is user involvement. Who would use the data and in which ways? How can data collection and release be improved? What do entrepreneurs need to turn data into business and meaningful services? To get answers to these questions and promote new co-operation networks around open data, Dublinlinked organises events where data users and providers meet.

One example is the so-called 'Dubmeets', with talks from experts, users and feedback discussions about the quality and uses of the data and new challenges. Most participants come from SMEs (30%) and the public sector (36%). Fifteen events have been organised since October 2011, with over 850 participants in total. Some events are thematic such as the tourism sector event held with the support of Dún Laoghaire Rathdown County Council's Enterprise & Tourism department. It explored the potential of data sharing for the



Transport Dubmeet 13.03.2013. Source: Dublinlinked



Open Data Hackathon 23.03.13. Source: Dublinlinked

tourism sector and discussed how to encourage data driven innovation, connecting participants from private industry, public bodies, and academia.

Dublinlinked also organises very practical, hands-on events, such as 'hack days', app development and data visualisation contests. During those events, teams of IT developers (together with designers and marketers) are invited to use the available data to develop applications and solutions to specific urban challenges for a prize. Such events are popular in Dublin's tech scene. Beyond the technical dimension, these events are also networking catalysts and contribute to create open data advocacy. To organise them, Dublinlinked had been actively collaborating with the National Digital Research Centre and Dublin's Science Gallery.

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## EARLY RESULTS AND CHALLENGES AHEAD

Open data should not be seen as a quick win to boost digital innovation and new jobs. It involves considerable cultural change, a lot of experimentation and its direct and indirect impacts are hard to quantify. Having said that, it is already possible to identify a number of achievements associated with Dublinlinked.



The most obvious ones involve the development of software applications by new start-ups. One example is the already popular 'mypp.ie', an application using planning data for the Dublin region that allows identifying on the map where particular types of developments (roads, buildings, infrastructure, etc.) are being planned. Mypp.ie provides the information in a more interactive and integrated way (than in a municipal website) and notifies users of new



developments, among other services available for a monthly fee. Mypp.ie has been recently scaled up in the United States as 'Buildingeye.com', keeping its ownership while expanding its services in California and Oregon.

## THE LESSONS FOR OTHER CITIES?

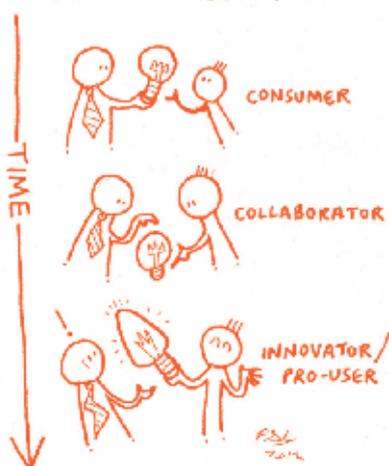
The context of Dublin – e.g. the presence of a dynamic ecosystem of IT companies and strong leadership – largely facilitated the emergence of Dublinked, and are rather city-specific. Yet, on a more concrete level, there are at least three important takeaways and lessons that can be generalised to other cities.

**First**, business and innovation-driven open data initiatives should move beyond building a datastore and proactively involve end-users (and potential entrepreneurs) in a process of co-production through community building initiatives and other events (e.g. hackathons, challenges and competitions). Moreover, there are advantages in involving private companies in the design and piloting of open data initiatives, as they can bring relevant expertise, resources and signal the most valuable datasets. However, local authorities should ensure that data is accessible on a neutral and equitable basis in order to reach a broader number of innovators.

**Second**, releasing city data requires cultural change and moving outside the comfort zone of city administrations – there is substantial uncertainty and risk of failure. Therefore, it requires strong political commitment (e.g. of city managers), social innovation and the establishment of agile units that can foster change in the organisation, nudge new routines and challenge vested interests (e.g. of data owners).

**Third**, there are – and will always be – important issues around privacy and data protection that will need to be addressed. Moreover, open data challenges traditional models of public procurement. This can be complex to navigate for public administrations where co-creation and ongoing maintenance of software and data are required. New regulations may be needed to better embed open data routines in the local administration and society. ●

### THE CHANGING ROLE OF THE USER...



The changing role of the user

Other examples are parking apps and road quality maps based on citizen reports and real time monitoring, but there are many more. Moreover, over the last three years, the participants in innovation events increased substantially and so did the range and number

of datasets published by Dublinked; at the time of this writing, more than 300 from 16 different organisations were online, including 18 research datasets and six dynamic data feeds. Currently, open data strategies gained considerable momentum and advocacy in several national strategies.

Dublinked is now moving into a new development stage, and its proponents have clear ideas about the ways forward. One issue is to communicate better its profile of innovation-enhancer rather than a simple datastore, namely by fostering new types of events and community engagement. Another is to focus collaboration more on solving concrete urban challenges. To make it happen, Dublinked partners have secured a joint budget for a permanent working group to deal with data curation, management, education and data visualisation. Finally, the progress of open data and new digital business development relies also on making sure that new procurement contracts in the city include agreements on open data releases.

#### 🔍 MORE INFORMATION

- **Datastore:** <http://www.dublinked.ie/datastore/datastore.php>
- **Inspirational uses:** <http://www.dublinked.com/?q=apps>
- **Weblog:** <https://dublinked.wordpress.com>

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# **ANALYTICAL TEMPLATE OF THE CASE STUDY**

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| BACKGROUND INFORMATION |                                                                                                                                               |
|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| NAME OF CITY           | Dublin                                                                                                                                        |
| REGION AND COUNTRY     | Dublin region, Ireland                                                                                                                        |
| GEOGRAPHIC SIZE        | Dublin Municipality: 528,000 inhabitants (115 km <sup>2</sup> )<br>Dublin Functional Urban Area: 1,497,000 inhabitants (318 km <sup>2</sup> ) |

| 1. PRACTICE DESCRIPTION                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ONE-LINER DESCRIPTION OF THE PRACTICE  | Dublinked is an Open Data platform combined with an <i>innovation network</i> initiative. It aims to make available to the wider audience data about public provisions – e.g. water, transport, environment, planning – to enable cross-sectoral collaboration and promote new data-driven businesses and innovation around Dublin city region challenges.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| MAIN REASON FOR HIGHLIGHTING THIS CASE | <p>Dublinked illustrates how to foster citizen empowerment and government transparency while nurturing economic and technological development. As releasing open data in cities raises many technical, legal, cultural and organisational challenges, Dublinked provides lessons for other cities willing to open their data and, through that, foster new digital businesses.</p> <p>Dublinked also illustrates how to design a balanced local partnership for these aims, involving four local authorities of the Dublin region, in partnership with the National University of Ireland Maynooth (NUIM) and a transnational IT corporation (IBM).</p> <p>Moreover, from an urban policy perspective, Dublinked is a flagship in a new generation of ‘soft’ local economic development initiatives. As explained further on, Dublinked distinguishes itself from other open data initiatives by i) proactively supporting the formation of new communities of innovators and ii) by promoting the release of complex (yet potentially more valuable) types of datasets based on data streams, live feeds, etc.</p> |
| OVERALL OBJECTIVE                      | <p>So far, most cities have deployed open data to enhance citizen empowerment, transparency, democratisation and participation. Many cities also release data aiming to increase the efficiency of public service provision (e.g. transport, planning and water). The idea is that opening data on such services will encourage many ‘innovative minds’ beyond the local government (users, researchers, businesses) to find good solutions for a problem, update the available information and develop valuable products and services such as mobile apps and other digital-based solutions.</p> <p>The Dublinked programme moves beyond these now almost ‘familiar’ open data approach, and adds a strong economic development &amp; innovation dimension. Among its core aims are promoting new economic activity, R&amp;D and job creation, attracting digital-related investments, developing exportable solutions and strengthening the high profile of Dublin’s IT-digital industries (Dublinked, 2010; Dublinked, 2011).</p>                                                                                |



| 1. PRACTICE DESCRIPTION (CONT'D)                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|----------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>DESCRIPTION OF ACTIVITIES</b>                               | <p>At the core of Dublinked is the development and permanent update of an open data repository on Greater Dublin's urban provisions and built environment. Dublinked collects, curates, standardises and shares data with the wider public on local services and provisions such as energy, environment, waste collection, water, traffic, planning, among others. This data is then openly released through an internet-accessible platform.</p> <p>Dublinked has two key additional ambitions. First, it established a so-called 'research zone': a specific area in the platform with licensed and more technically complex data sets (e.g. real-time streams of traffic, energy or water flows). The access to this area is membership-based – only registered researchers, businesses, entrepreneurs and governmental organisations can access it upon agreement to use the data for research purposes only. The data offered in this area offers more scope for innovation and commercial opportunities, but requires additional curation and calibration.</p> <p>Second, Dublinked is not only about the technical platform (software) and the data. Dublinked's proponents regularly host diffusion and networking events for potential data users and providers, as an integral part of the strategy. They do so in order to i) raise awareness, ii) get feedback from the data-users (e.g. which data they want to see, in which formats) and, importantly, iii) to facilitate the development of new networks of innovators, communities and R&amp;D projects around the data and the city's challenges. Dublinked events and workshops provide good opportunities to informally raise awareness for new relevant urban issues while brokering new partnerships.</p> |
| <b>INTEGRATED APPROACH</b>                                     | <p>Dublinked combines commercial business development and innovation with the search for solutions for specific urban problems in fields such as transport, traffic, water, etc., thus dealing with environmental and urban sustainability issues. It also intends to engage with other state agencies and share data about safety, employment and health. Moreover, it is planned to support transparency and more accessible and accountable local government. Dublinked does not directly tackle structural issues of digital exclusion and access, although local government partners would each have their own digital inclusion programmes.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>TARGET AUDIENCE</b>                                         | <p>Dublinked targets all potential users of urban data – whether for profit, research, public accountability or civic innovation – notably large and small companies (in the fields of IT-digital, analytics, etc.), entrepreneurs, academic researchers and universities, governments and citizens at large.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>MAINSTREAMING OF GENDER EQUALITY AND NON-DISCRIMINATION</b> | <p>The initiative is gender neutral, but wasn't designed explicitly accounting for gender issues. Yet, most of the middle managers responsible for Dublinked's kick-off and early implementation are females.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>TIMEFRAME OF THE PRACTICE IMPLEMENTED</b>                   | <p>Dublinked was formally launched on the 18th October 2011, during the yearly Innovation Dublin festival. There is no planned end date for the initiative. A 3-year review was carried out in 2014, which set out a future strategy to grow Dublinked and prioritise the roll out of open data as a key new service.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |



## 2. POLITICAL AND STRATEGIC CONTEXT

|                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|---------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>2.1 NATIONAL, REGIONAL AND CITY FRAMEWORK</b></p> | <p>Dublin is Ireland’s national capital and represents 40% of the Irish economy. The Greater Dublin region encompasses Dublin and the surrounding Counties of Fingal, South Dublin and Dún Laoghaire-Rathdown. During the ‘Celtic Tiger’ years (roughly during the 1990s and early 2000s), the Irish Economy grew at 6-8% rates per annum; simultaneously, Dublin’s population and jobs grew steadily and the city attracted many migrants, making Dublin an increasingly diverse metropolis. However, in 2008, Ireland and Dublin’s growth came to a halt with the outburst of a financial and banking crisis and the collapse of the construction sector. The economy contracted fast and unemployment soared, leading to the EU/IMF bailout in 2010.</p> <p>In recent years, Ireland and Dublin have bounced back. Once again, the city is a magnet for foreign direct investment, in many sectors, attracted partly by low taxation, but, essentially, by the availability of talent and skills. The Irish Industrial and FDI attraction agency (IDA Ireland, 2012) reported that in 2011 foreign companies created 13,000 new jobs and invested € 700 m in R&amp;D, and the lion’s share of this is concentrated in Dublin (over 50%). In terms of sectors, digital industries have long been important. Since 2000, Dublin has been a magnet for global companies in software, animation, digital media and cloud computing, and from 2011/12, leading companies such as Intel, Microsoft, IBM, Dell, Google, Facebook, LinkedIn, Zynga, Amazon or PayPal started or expanded operations in Dublin, making the city a leading world capital of digital media and the new ‘app-economy’ (e.g. Cudden, 2011).</p> <p>Dublinked was launched in 2011 with the ambition to nurture a full-fledged ‘IT-digital innovation ecosystem’ in the city, drawing on the presence of many global companies and entrepreneurs. Moreover, Dublinked was one of the flagship initiatives of the so-called Creative Dublin Alliance (CDA), a network of high-level decision makers at the Greater Dublin level (University deans, Company’s CEOs, President of the Chamber of Commerce, etc., chaired by the City Manager) formed in 2008 to develop solutions for common challenges (NYC Global Partners, 2011). The action of the CDA and the development of competitiveness-related projects gained ground and legitimation in the aftermath of the economic slump. In a context of significant budget cuts, rising public debt and an overall grim mood, the key objective was to prepare for a fast and sustainable recovery.</p> <p>More recently, there are emerging signs of growth indicating a more optimistic outlook for Dublin and the Irish economy. However, there is a commitment at the local level for continued investment in innovation and entrepreneurship and Dublinked is seen as an important tool for this.</p> |
| <p><b>2.2 THE PLANNING CONTEXT</b></p>                  | <p>Beyond the more general City Development Plan 2011-2017 for Dublin, Dublinked is closely related with the objectives of <i>Dublin’s Economic Development Action Plan</i> (Creative Dublin Alliance, 2009). This strategic plan intended to guide Dublin towards economic recovery. The plan did not propose quick fixes or strict target indicators, but rather focused on medium and long-term initiatives – of which Dublinked was just one. The plan was backed at the highest level by Dublin’s City Manager (John Tierney) under a ‘triple helix’ framework (Government, University, Privates/Industry).</p> <p>In 2009, open data was already part of the plan (Creative Dublin Alliance, 2009) and resonated with the objective of “Establishing a central regional data point across the city authorities [Action 1.4]” (p.14). The vision for Dublinked grew from here, and despite its adaptations, its features have been closely aligned with Dublin’s economic strategic thinking in the City Council.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |



3. DESIGN & IMPLEMENTATION

3.1 PRACTICE DESIGN AND PLANNING

**Project idea**

Dublinked has many ‘parents’, whose interests converged around 2008-9. Before this time, Dublin’s City Council (DCC) Manager, John Tierney, already wanted to develop a data repository and observatory for the greater Dublin region, yet in a less ambitious way (see section 2.2). The idea for Dublinked matured as a number of IT corporations with an interest in urban technology (e.g. Siemens, IBM, Accenture, Intel) were expanding operations in Dublin (see section 2.1). Some of them approached DCC’s City Manager, expressing their interest in accessing data related to the city’s service provision, namely in the fields of energy, transport and water. Particularly, IBM was starting to explore possibilities for using Dublin as a ‘smart city’ test-bed for new urban solutions.

One of the first ideas in Dublin was to develop a ‘shared data platform’, as a partnership between DCC and large IT companies. Yet this idea was soon abandoned since it would give privileged treatment to big IT players; however, full outsourcing of such a platform would also not be a solution, introducing delays and complications due to the need to comply with rules of procurement and future commercial advantage. Therefore, a more consensual solution emerged in the form of a partnership between DCC and three other local authorities, with the technical co-ordination of NUIM (a local university with competences in data analytics, geo-location and innovation eco-systems). Before 2009, NUIM had already conducted an exploratory study on open-data strategies and their requirements. In 2009, DCC, NUIM and IBM met to discuss the design of Dublinked, now with the ambition of making it more than a data repository: a tool to spur innovation and growth.

With this in mind, achieving the right urban scale was an issue (larger amounts of data at the relevant metropolitan level), and thus the strategy of making Dublinked a metropolitan initiative, with the participation of DCC plus three contiguous city councils.

**Previous initiatives**

Before Dublinked started, there already was a similar initiative in the County of Fingal. In 2006, Fingal started to internally report standardised data from multiple departments, through the so-called Fingal Data Hub (e.g. geo-referenced data on health, education, policing, employment, planning). During the summer 2010 the first data visualisation efforts took place; in November 2010 the website Fingal Open Data was launched together with an ‘hack-day’ event – ‘apps4fingal’ – within the Innovation Dublin festival, to explore which types of apps could emerge out of the data. At this time, other counties and DCC were starting to explore similar initiatives and thus the momentum was created for cooperation, although the Fingal Open Data initiative developed alone and was the first in Ireland.

Fingal jointly led the Dublinked initiative but has maintained its own open data hub for the county’s internal affairs. Here rests one important difference between Dublinked and Fingal Open Data: while in Fingal the primary objectives have been internal data standardisation, transparency and participation, for Dublinked the wider objectives include economic development, job creation and nurturing new innovation networks.



### 3. DESIGN & IMPLEMENTATION (CONT'D)

#### 3.1 PRACTICE DESIGN AND PLANNING

##### **Steering group**

As we will explore further on, Dublinked is carried out in association between the four local authorities of greater Dublin region and the National University of Ireland Maynooth (NUIM). Moreover, it benefits from the technical support of IBM since the early beginning. During the planning stage, Dublinked was 'incubated' under the umbrella of the Creative Dublin Alliance, securing the commitment and support of DCC's City Manager. Following a change of management in each of the four Local Authorities, Dublinked has secured a renewed commitment from each of the four new City Managers (now renamed Chief Executives under Local Government Reform) to support and grow the initiative.

##### **Management structure**

Its founding members, with the technical support of IBM run the implementation of Dublinked (see section 3.1). DCC set up the partnership and mobilised the necessary networks (e.g. with the University and IBM), taking the lead in coordinating data collection and releasing efforts with other partners. The participating local authorities worked to provide data and actively cooperate in overseeing, defining and implementing the vision of the initiative.

NUIM is responsible for the front-end of the platform, data curation and the organisation of networking events. It is also in charge of Dublinked's coordination, management and customer-facing portal services. IBM provides the back-office of the platform (structure the data, query tools, etc.).

The partners have been organised across different working groups: a regional group (with each city council's anchor men/women), a larger coordination group and a technical group. The Dublinked organisation has approximately four full time equivalent (FTE) staff, with one staff member based in NUIM (employed by Dublinked) and additional staff from local authorities. There is 1.5 FTE from Dublin City Council (three staff contributing part-time), plus 0.5 FTE from each of the three county councils. These local authority team members focus on operations and data activities. The full time Dublinked staff member based in NUIM performs the marketing and events role.

In addition to systemising the support structures within each project partner organisation, Dublinked is currently putting in place a new regional governance structure to include a high level Advisory Board. Dublinked is also recruiting for a full time regional project team to include a manager, technical resource and innovation network co-ordinator, to be in place from early 2015.



## 3. DESIGN &amp; IMPLEMENTATION (CONT'D)

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| <p><b>3.2 MANAGEMENT</b></p>                       | <p><b>Agility</b></p> <p>Good communication within and between the organisations involved with Dublinked has been pivotal to tackle unexpected hurdles. More concretely, it was important to assure that relevant data could be easily collected from the council departments, and that proper liaisons were established with stakeholders external to Dublinked (e.g. data users). Internally to the public administration, there were concerns that data would reveal their flaws. Open data was simply too big a step for many bureaucratic units within and outside the city.</p> <p>Therefore, a recently created unit within DCC (named 'The Studio') was tasked to communicate the project's aims and to reduce resistance within the administration. It was set up as a new experimental unit, composed by a mixed team of librarians, planners, architects, designers, etc., deploying design-thinking and methodologies for user involvement. The Studio directly reported to the Dublin City Manager.</p> <p>The Studio lacked the crystallised routines and vested interests of other city departments, making it easier to establish cooperation with other units and communicate with the general audience. It was important for the project's early implementation (e.g. collecting and preparing data to be released), namely because open data was new to the city and to DCC, requiring a combination of knowledge management with a customer-oriented view (the future users of the data). Together with the Studio's coordinator, there were managers within each department responsible for collecting and authorising the release of data (see above).</p> <p>In 2014, following a change of governance and organisational structures within Dublin City, Dublinked was reintegrated into core Planning and Development functions, reporting directly to the new Chief Executive as part of a more co-ordinated city wide approach to 'smart city' (i.e. new urban IT-related) projects.</p> |
| <p><b>3.3 MONITORING AND EVALUATION SYSTEM</b></p> | <p><b>Monitoring</b></p> <p>The philosophy of Dublinked and open data requires shifts in cultural behaviour and mindsets. It is a long-term endeavour that takes time to show its full potential. Although Dublinked does not require members or users to list their re-use developments, it actively encourages the sharing of re-use stories on the Dublinked 'Inspirations' webpage and at Innovation Network events, to help monitor outputs – which are quantitative and qualitative, direct and indirect. Examples are (see also section 6.3):</p> <ul style="list-style-type: none"> <li>• The development and release of new digital solutions and applications (e.g. apps for smartphones) developed with Dublinked's data;</li> <li>• Data visualisations using Dublinked data;</li> <li>• Visitors to Dublinked website and social media engagement;</li> <li>• Data downloads and data requests received by users;</li> <li>• The formation of new networks of innovators to deal with Dublinked's data;</li> <li>• Progressive change in the mindsets of local administration concerning the release of data;</li> <li>• Involvement of new organisations beyond local public administration releasing open data.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |



### 3. DESIGN & IMPLEMENTATION (CONT'D)

#### 3.3 MONITORING AND EVALUATION SYSTEM

##### Results and target specification

The innovative and experimental nature of Dublinked has been making it difficult to set rigid and quantified targets as a measure of the initiative's success. Open data initiatives are relatively recent, and there are few accepted standards of what constitutes a 'successful' initiative.

Yet, in the beginning of the initiative, Dublinked set an indicative minimum number of 30 datasets that had to be released by each city council. The number of current datasets exceeds 300 from 16 organisations. This includes 18 research datasets and 6 dynamic data feeds.

##### Evaluation approach

Dublinked has been relying on self-evaluation of its members, realised through several formal and informal meetings. Both the city councils and other key partners (namely the NUIM, who manages the initiative) frequently interact and self-criticise the initiative, reflecting on strengths, weaknesses and ways forwards.

Moreover, Dublinked is permanently evaluated through feedbacks from users. For example, users provide explicit feedback and report on the value of the data released by Dublinked, on the ways it could/should be presented and systematised, etc. Most of this evaluation takes place through events with several entrepreneurs and researchers, but also through more formalised meetings with lead users (e.g. IBM).

Dublinked is currently being internally assessed at DCC. There were changes in the city's department structure, and new directions for the initiative are under discussion.

##### Governance mechanism

Dublinked runs through a memorandum of understanding signed between the involved parties (four local councils and NUIM), comprising on the implementation of Dublinked, with a clear set of responsibilities and tasks attributed to each partner.

The relation between Dublinked and with IBM is not contractual (and does not involve financial compensations), but is based on a memorandum of understanding for joint collaboration to explore and learn from open data solutions (in practice, IBM provides the platform and some back-office support to Dublinked).

The relation between Dublinked and other data providers (beyond the four city councils) is regulated through membership agreements (Dublinked, 2011).

**3. DESIGN & IMPLEMENTATION (CONT'D)****3.3 MONITORING AND EVALUATION SYSTEM****Partnerships, roles and interests of the partners**

Dublinked is a partnership involving the four city councils of Greater Dublin Region, the University (NUIM) and IBM. Each partner has concrete roles and interests in the initiative.

Dublin City Council took the lead and involved other local authorities and partners in the initiative. Local authorities have an interest to systematise their data, increase transparency and accountability with citizens and nudge new uses for it (e.g. problem solving, crowdsourcing urban challenges, nudge new digital businesses – see section 1). They have been the main data providers for Dublinked. The partnership between four local authorities helped Dublinked to gain scale (more scale-relevant data available, more ‘regional feeling’), which was essential bearing in mind its innovation objectives.

NUIM brought in their reputation and expertise in the field, assuming the technical leadership and coordination of the initiative; as a trustworthy player, it also gives a more independent feeling to the initiative, showing that it was not something that ‘belonged’ exclusively to the Councils but was opened to society and to innovators. NUIM curates and manages the data and the system, and puts financial resources in the project (one FTE employee) in order to gain further reputation and expertise (and, hopefully, acquire new grants and projects in this domain in the future).

IBM is formally responsible for the technical back-office and design of Dublinked’s platform. Yet, their role goes way beyond that. On the one hand, their data ‘requests’ signal the types of relevant (read: profitable) data that can eventually be released first – e.g. specific types of water, planning, traffic or energy flows. However, since Dublinked runs on an equity basis and with free access, once collected the data become available for everybody in the platform and not only for the companies who could afford (and have enough power) to access it. On the other hand, IBM (and other large companies) contributes to the fast prototyping of solutions and is well positioned to demonstrate the business case of open data in other geographies. By partnering with Dublinked, IBM gains new knowledge on the nuts and bolts and the challenges of open data in cities.



### 3. DESIGN & IMPLEMENTATION (CONT'D)

#### 3.4 GOVERNANCE: PARTNERSHIP, PARTICIPATION, MOBILISATION AND EMPOWERMENT

##### **Involvement of stakeholders and end-users**

A central feature in Dublinked is user involvement – the final beneficiaries of the initiative ('quadruple' helix). Who, in the end, will use the data? How will it be used? How can the data collection and release be improved? To get answers to these questions, Dublinked organises different types of events, not only to speed up the implementation but also to improve the initiative's design.

One type of event is the thematic workshop e.g. on opportunities and challenges in using spatial data. Dublinked managers, data providers and an emerging community of open data users attend those events. There are presentations from experts, users and feedback discussions about the quality of the data, and new challenges are raised. Moreover, such events constitute networking platforms where ideas on the data are exchanged and new projects and cooperation may emerge.

Other popular, more hands-on types of events and user-involvement platforms are 'hack-days' or 'data-camps' and 'app development contests'. During those events, which can have different durations, teams of IT developers (eventually together with designers and marketers) are invited to use the available data provided to develop applications and solutions out of it, to be awarded with prizes. Such events are popular within the IT community in Dublin. Beyond the technical dimension, these events are relevant networking catalysts as well as cradles for new projects and commercial partnerships. They also contribute to create open data advocacy. To organise such events, Dublinked has been actively collaborating with the National Digital Research Centre and more recently with Dublin's Science Gallery.

Fifteen events have been organised since October 2011. Over 850 people have attended these events and the Dublinked mailing lists also contains over 850 names. An illustrative example is the tourism sector event held with the support of Dun Laoghaire Rathdown County Council's Enterprise & Tourism department. This event explored the potential of data sharing for the tourism sector and discussed how to encourage data driven innovation, connecting attendees from private industry, public bodies, and academia.

##### **Role of the city and political support**

During the early implementation stages, namely when the initiative's design was mainly 'in the people's minds', leadership played a key role. The initiative started with a small group of persons within DCC, namely the City Manager John Tierney and his senior assistants within the Economic Development Unit. In this case, leadership was key to ensure 'connectedness', both outside and inside DCC.

First, the leadership of DCC has been relevant to keep the momentum and re-shape the partnership as difficulties emerged, namely i) by challenging legal uncertainties with the release of open data and ii) by being able to quickly involve and convince high-level contacts in the other county councils, NUIM and IBM.

Second, high-level leadership was central to legitimate such an 'out-of-the-box' initiative within the organisation, e.g. by making sure that departments would share their data. Since the project was backed at such a high-level within DCC, it could overcome the control of more bureaucratic departments, delegating responsibilities to 'lighter' units (the Studio – see section 3.2), with less crystallised routines and interests, making it easier to speed up and smooth the implementation process internally, namely by establishing faster and more informal communication channels. By being backed at a higher-level, a group of executive managers (with the right technical and communication skills) could emerge and act as central facilitators within the organisation, driving the process forward on a daily-basis.



## 4. INNOVATIVE ELEMENTS AND NOVEL APPROACHES

### Key innovation

The principal innovation in Dublinked is to explicitly use open data to nudge innovation, R&D, collaboration and local digital business development (beyond transparency and accountability).

To this effect, Dublinked complements the more mainstream urban 'datastore' with i) more complex data sets, subject to licencing and enhanced curation (published in a separate 'research zone' – see section 1 and 6.1) and ii) a set of regular events and meetings with the ambition to involve end-users (entrepreneurs and potential data users) in new collaborations and in the development of new prototypes, apps and solutions (see section 3.4).

Moreover, Dublinked was supported by a new 'design-thinking' unit within Dublin Council ('the Studio'), which facilitated more streamlined data collection efforts and communication within and outside Dublin's City Council (see section 3.2; 6.2 and 7.1).

### Initiator of the innovation(s)

These innovations were proposed and initiated as a co-production between the city councils (namely Dublin and Fingal) and the University (NIUM), who are responsible for the overall management of Dublinked.

### New practices

- Curation of complex datasets, in order to allow companies and users to reap more economic value out of the data, e.g. through R&D (see section 1 and 6.1)
- Hosting of events, thematic workshops, data camps, etc., in order to nurture the formation of new innovation networks between public and private parties (see section 3.4)
- The involvement of a design-thinking unit, to facilitate data collection within the council and to involve users through design-centred methodologies (see section 3.2; 6.2 and 7.1)

### Partnership innovation

Dublinked also had innovative elements in its underlying partnership, namely the combination of four local authorities working together with the University (NUIM) and a large IT company (IBM).

Setting up this partnership required strong leadership and coordination (enacted by Dublin City Council, acting as boundary spanner). Beyond providing coordination and expertise, NUIM acted as a neutral party to avoid potential conflicts of interest and privileged treatment between public authorities and private companies (namely IBM) – see section 3.4.



| 5. FUNDING                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|---------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 5.1 FUNDING                                 | <p><b>Budget</b></p> <p>So far, Dublinked has been running on a rather small budget (under €100,000/year). This amount goes to website and data hosting, plus the organisation of small events such as diffusion and workshop meetings, 'data-camp' events and competition rewards (for example, for Fingal's 'app contest', the combined prize fund was of €11,500, shared by the Final County Council and other sponsors). The lion's share of the budget is currently coming from NUIM who pays for their staff from central research funds. The Dublin Regional authority has recently contributed to the local authority costs for this project.</p> <p>Dublinked does not collect money or royalties from intellectual property development. This would be undesirable for the innovators and could make the initiative lose momentum in an early implementation stage. Moreover, it would be undesirable for Dublinked as well, since royalties would raise many legal issues, block 'early wins' and slow down the implementation overall. Representatives of DCC and Fingal consider that there are other more appropriate financial streams to recover the investments, such as income taxes, local service improvements, etc.</p> <p>From 2015, Dublinked has secured an increased financial and resource commitment from project partners to fund a full time three person regional team to drive the initiative forward.</p> |
|                                             | <p><b>Procedures to acquire funding</b></p> <p>Dublinked is currently looking to engage with potential partners with a view to securing future EU funding, namely from Horizon 2020 programme.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                                             | <p><b>Private leverage</b></p> <p>The main type of private leverage resulting from Dublinked are the man-hours / investments done by entrepreneurs and companies in the development of new apps and solutions (see section 6.3). Moreover, there is anecdotal evidence collected during our interviews (both with DCC and IBM) that the commitment of DCC in releasing open data and fostering networks among public and private digital innovators played a role in the decision of IBM to a global 'smart-city' lab (200 R&amp;D jobs) in Dublin.</p> <p>However, the collection of fees from private companies (e.g. to access a planned 'research zone' and more complex data sets) did not take off. Currently, Dublinked's partners are discussing new ways of funding the initiative and of involving private contributors to it (see section 6.1).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 5.2 OPERATIONAL PROGRAMME                   | Not applicable                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 5.3 MANAGING AUTHORITY (MA – IF RELEVANT)   | Not applicable                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 5.4 COHESION POLICY OBJECTIVE (IF RELEVANT) | Not applicable                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| 5.5 LINK TO EU 2020                         | Dublinked contributes to multiple objectives of EU2020, associated with its 'smart growth' axis, more concretely to i) improving transparency and efficiency in the public administration by developing open and citizen-centred public service and ii) opening new innovation opportunities in the private sector.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |



## 6. PROJECT ASSESSMENT

### 6.1. FINANCIAL SUSTAINABILITY

As Dublinked enters a new development stage, the current funding model requires revisions. There will be ongoing operating costs incurred to i) run the innovation events and workshops, ii) enable data curation and operation of the legal agreements for more complex datasets, and iii) assist data providers to release their data. Moreover, Dublinked's proponents believe that new skills will be required in the fields of data analytics and visualisation, data extraction and training, requiring new staff.

The original idea was to have a membership model that would support Dublinked with annual subscription fees (that would buy members access to additional data and services on the platform). This model has not worked in practice and, so far, the Local Authorities and NUIM have funded the most of the expenditures. Approximately 2 % of total income (€3,100) since start-up has come from membership fees; most of the data is freely available online and there is little incentive to subscribe to the 'research zone' (see section 1). In the short-term, public funding is likely to be required – at least until alternative revenue streams from the service provided can be harnessed.

In 2014, the decision was taken to review the business model, providing for free membership in line with 'open data' principles. Therefore, it became clear there was a need to secure additional funding from partner contributions to put in place a permanent staffing structure to drive the development of Dublinked and co-ordinate a regional approach. The agreed budget for a three person project team with increased events and activities is €240,000, with a view to leveraging future potential funding through Horizon 2020 and other European projects which align with Dublinked objectives.



## 6. PROJECT ASSESSMENT (CONT'D)

### 6.2 ISSUES AND PROBLEMS

As a rather innovative and unconventional initiative, Dublinked rests outside the traditional 'comfort zone' of the City Administration. Projects with such characteristics tend to fail in traditional cost-benefit and risk assessment analysis; moreover, they hardly fit the established regulatory environment. Several barriers had to be overcome before the initiative could be launched.

First, Dublinked raised significant legal and regulatory challenges. In the early start-up stage, the design of the partnership and the relation with IBM were particularly problematic. IBM was strongly involved since the beginning and helped to shape the vision, but directly teaming up with IBM would constitute, with regard to EU law, a form of privileged treatment and unfair advantage (e.g. for future procurement tenders). In this case, an acceptable solution was to establish the core partnership between DCC, NUIM and three county councils, while signing a complementary agreement with IBM for the implementation of parts of the platform, with many legal clauses to comply with the regulations.

Second, there were (and still are) legal and technical issues related with the more complex datasets (e.g. data streams; datasets that indirectly risk revealing the identity of persons and organisations). Thus, Dublinked started with the already available, easier-to-collect and less 'problematic' datasets. Starting up with such data allowed keeping the momentum while demonstrating the business case for open data – the hurdles to deal with more complex datasets from the onset could have blocked Dublinked's progress. Moreover, the cooperation of the four councils in the Dublin Region was very relevant to take the initiative to an adequate scale: it helped to amass a significant amount of data from the beginning.

Third, many city departments (e.g. within DCC) were hesitant about releasing their own data ("it will embarrass us"; "people will pick up holes"). An important challenge was thus to identify the right department in the city to act as 'central facilitator' for sharing the data and to drive internal processes, ensuring cooperation, dialogue and liaison with other departments. A first try was to give the lead to DCC's IT department, but this did not work due to its orientation towards formal and structured projects and 'inside-the-box' thinking. To solve this issue, the City Manager assigned the task to a newly created and more flexible 'design-thinking' unit of DCC ('the Studio'), with less standardised routines and strong communication skills.

Naturally, Dublinked is still in a relatively early development stage and a number of challenges should be addressed in the future, namely i) communicating its image of innovation-enhancer rather than simple datastore; ii) fostering new types of events and iii) ensuring that new procurement contracts in the city include agreements on open data releases.

Finally, Dublinked has also experienced challenges in trying to quantify success in terms of driving economic development and innovation, considering the difficulty in measuring both direct and indirect outputs. The challenge is for city region partners to agree clear priorities and build innovative 'use-case' challenges that are supported by high quality datasets.



## 6. PROJECT ASSESSMENT (CONT'D)

### 6.3 PROJECT OUTPUTS & RESULTS

Releasing open data – and using it for digital innovation in cities – is not a quick win. However, it is already possible to identify a number of promising achievements.

First, there are a number of apps developed out of Dublin's data. One example is the (already popular) mypp.ie, an application using planning data for the Dublin region that allows identifying on the map where particular types of developments (roads, buildings, infrastructure, etc.) are being planned. Mypp has been scaled up to some success in the US market as Buildingeye.com, an early win for Dublin as a prototype city for digital services. Moreover, there are a number of parking apps as well, some linked directly to the transport authority, but developed through Dublin's open data. However, so far, namely because of the data already released (more large flow-based data sets are still to come), most of the developed apps are focused on modest improvements in local service provision. Moreover, Fingal's open data initiative (recently federated into Dublin's) gave rise to 36 new app ideas and, out of those, 21 apps and solutions were developed by small companies and entrepreneurs involved in the first 'apps4fingal' contest. Most of them are web-based, and many run on mobile devices. One example is 'Fingal day tripper', which uses the available data to provide a number of tourism routes and places to spend the day, linked with existing amenities.

A second indication of the early success of Dublin's is the number of visitors and data downloads. Dublin's reported that in the first six months of implementation, the platform and datasets had more than 6,600 views, from 46 countries and 250 cities, mainly in Europe and US, but also in Asia and Australia. During January-November 2014, Dublin's platform received more than 82,000 views, of which 76 percent are new visitors. However, perhaps a better indicator of the interest and effective demand is the number of downloads per dataset, which reached the thousands already during the first month of implementation.

Third, there is the contribution of Dublin's to the creation of new communities of innovators around open data in Dublin and Ireland, which can be partly accessed by the number of participants in 'data-camps' (120 participants during the launch of the initiative) and the Dublin's technical workshops. There is anecdotal evidence pointing to the emergence of new project networks and innovation communities around Dublin's, acting as boundary spanners and helping entrepreneurs and smaller partners to plug in new innovation networks. Since October 2013, Dublin's organised fifteen events including larger events, 'dubmeets' and a recent visualisation competition launch; the majority of participants come from SMEs (30%) and the public sector (36%). In excess of 850 people have attended these events and the Dublin's mailing list contains over 850 names.

Fourth, Dublin's is contributing to better coordination between public authorities, and helped to raise awareness about the value of open data in society. During the first implementation months, the number of data sets released by the four city councils doubled. Associated with this are better data standardisation procedures, and importantly, better inter-department and inter-institutional communication. Indeed, over the last three years, the range and number of datasets published on the Dublin's data store has increased significantly and the data publishers, or contributors, have expanded beyond the Local Authorities to include national bodies, such as the National Transport Authority and the Railway Procurement Agency, among others.

Fifth, Dublin's has contributed to form new advocacy for the development of an open data movement at the national level. Since the launch of Dublin's, open data is increasingly seen as a major driver for economic growth, improved transparency, accountability and performance of public services. Government policy statements, such as the e-Government strategy of April 2012, have shown national level commitment to open data. The Irish Department of Public Expenditure and Reform has established the office of the government chief information officer in 2013. As part of this, the Minister for Public Expenditure and Reform has announced a number of measures to accelerate open data in Ireland, including the launch of Ireland's first national open data portal as a core element of the Open Government Partnership Action Plan.



## 7. SUCCESS FACTORS, LESSONS LEARNED, AND CONDITIONS

### 7.1. SUCCESS FACTORS

First, the push of IBM and other lead firms interested in open data was important to ignite the initiative, showing the relevance of the data and the opportunity for the city. The requirements of such companies helped to set priorities on the most 'valuable' types of data to collect and release. Yet, Dublinked's proponents also recognised that too much private involvement could result in rent seeking and unfair advantages vis-à-vis other (smaller) players. It was decided to make the data available on a neutral platform, thus combining the best of two worlds: private push and equitable access.

Second, the kick-off and early implementation of Dublinked largely benefited from the leadership of the City Manager and his senior staff. We found this leadership to be important to legitimise such an 'out-of-the-box' initiative within the bureaucratic structures of DCC; to form a high-level partnership to steer the project, bridging interests between high-level representatives of other City Councils and the University; to go against the status-quo and cultural barriers while challenging legal interpretations, and to invest in uncertain projects in times of austerity.

Third, the University (NUIM) played a key role acting as a neutral independent party between the public and private sector, contributing to solve many of the issues and challenges faced during the start-up process. Namely when finance was an issue, the university stepped up making an important contribution, which was critical in terms of the overall progress.

Fourth, developing the initiative on the metro level (Dublin region) was a strong plus. The metropolitan scale helped to collect data at the relevant level for the users, and also to start up with a large and more consistent amount of data. Moreover, it facilitated learning from the more advanced open data initiative of Fingal council.

Fifth, the project benefited from the Studio as the anchor unit within DCC and as the connection with other partners and organisations outside DCC. The Studio had the right user-involvement thinking, knowledge management and communication skills necessary to convince departments within the organisation to release their data, doing this through fast communication channels than more bureaucratised units would allow.

Sixth, the launch and early implementation of Dublinked benefited from smart prioritisation. It started with the collection and release of less complex datasets, with limited privacy issues, technically easy to deal with, and almost exclusively from the public sector. This helped to generate early enthusiasm and give a good dimension to the data repository, while testing the user's feedback (paving the ground for a second, more demanding stage, with real-time flows and more complex datasets). Starting with the most complex and controversial pieces would have slowed down the process and create many blockages from the early beginning. Overall, it was about the capacity to select and pick the 'low hanging fruit'.

**7. SUCCESS FACTORS, LESSONS LEARNED, AND CONDITIONS (CONT'D)**

|                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
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| <p><b>7.2. LESSONS LEARNED</b></p>                       | <ul style="list-style-type: none"> <li>• In order to support new digital-related businesses and innovation, open data initiatives should move beyond building a data store and invest resources to involve end-users in the processes, namely through multiple events, ‘hack-days’ and other community building initiatives.</li> <li>• There are advantages in involving private companies in the design and piloting of open data initiatives in cities, as they can bring relevant expertise, resources and signal the most valuable datasets (as illustrated with IBM). However, local authorities should make sure to avoid privilege treatment and ensure that data can be accessed on a neutral and equitable basis, namely in order to reach a broader number of innovators in the city.</li> <li>• Open data is not a quick win, easily leading to digital innovation and new business creation in the city; the approach may take time to prove its value and permeate mind-sets (within and outside city councils) and will require combinations of public and private resources before alternative revenue streams from the services provided can be harnessed.</li> <li>• Releasing city data requires cultural change and moving outside the comfort zone of the city administration (there is substantial uncertainty and risk of failure). In this sense, it requires strong political support and high-level commitment (e.g. of the city manager), social innovation and the establishment of agile units that can foster change in the organisation, encourage new routines and challenge vested interests (e.g. of data owners). In many cases the challenge is to communicate the vision so that there is understanding around the added value that good data management and data sharing practices can bring.</li> <li>• Even though more complex data streams can have higher commercial value and interest for entrepreneurs, open data initiatives can benefit from starting with ‘easier’ datasets in order to prove themselves. Moreover, having data at the relevant level (often metropolitan) calls for partnerships across city and national administration.</li> </ul> |
| <p><b>7.3. TRANSFER</b></p>                              | <p>To our knowledge, Dublinked’s model, which is a relatively recent initiative, has not been fully transferred as such to other places yet.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <p><b>7.4. TRANSFER CONDITIONS (TRANSFERABILITY)</b></p> | <p>Other cities willing to develop open data initiatives can certainly learn from Dublinked’s early experience, lessons and general success factors, but should bear in mind that the context of the city has been favourable for the development of open data and IT-related initiatives. Particularly relevant here was the strong alignment between an advanced local economic vision, the presence of proactive leaders and the economic structure of the city (a sizable concentration of large and knowledge-intensive IT companies). Moreover, the size of Dublin (‘not too big, not too small’) and its IT-related knowledge base provides fertile ground for the development of new ecosystems of innovators (e.g. easiness to connect, knowing ‘who is who’, pushing new projects and interactions, etc.).</p> <p>Other cities willing to apply such a model should make sure to have committed leadership at high levels of the administration (to back the initiative during times of uncertainty and nudge cultural change), metropolitan partnerships (to get the ‘right’ data), enough expertise to curate and deal with sophisticated data and should be able to speak the languages of different audiences (city administration, entrepreneurs, researchers, etc.).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |



## ANNEX

| FURTHER INFORMATION                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
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| <b>BIBLIOGRAPHY</b>                                        | <p>Creative Dublin Alliance (2009), Economic Development Action Plan for the Dublin City Region. Dublin City Council. Available at <a href="http://dublincity.ie/sites/default/files/content//YourCouncil/CouncilPublications/Documents/Dublin_Region_Economic_Action_Plan_-_Lo_Res.pdf">http://dublincity.ie/sites/default/files/content//YourCouncil/CouncilPublications/Documents/Dublin_Region_Economic_Action_Plan_-_Lo_Res.pdf</a></p> <p>Cudden, J. (2011), Dublin Economic Profile, overview developed for the project 'Cities as Engines of Sustainable Competitiveness', Euricur, Erasmus University Rotterdam.</p> <p>Dublinked (2010), Dublinked Memorandum of Understanding. NUIM, Dublin City Council, South Dublin County Council, Fingal County Council and Dún Laoghaire Rathdown County Council.</p> <p>Dublinked (2011), Membership agreement, available at <a href="http://www.dublinked.ie/images/Dublinked-MembershipAgreement%20.pdf">http://www.dublinked.ie/images/Dublinked-MembershipAgreement%20.pdf</a> [accessed 11.11.2014]</p> <p>IDA Ireland (2012), End of the year statement (by CEO Barry O'Leary), January 2012, Dublin, Ireland.</p> <p>NYC Global Partners (2011), Best Practice: Creative Dublin Alliance - Creating the Leadership Consensus, 19th July 2011.</p> <p><b>Other relevant websites:</b><br/> <a href="http://www.dublinked.ie">http://www.dublinked.ie</a> (Dublinked portal)<br/> <a href="http://www.dublinked.ie/datastore/datastore.php">http://www.dublinked.ie/datastore/datastore.php</a> (Datastore)<br/> <a href="http://www.dublinked.com/?q=apps">http://www.dublinked.com/?q=apps</a> (Dublinked's apps and 'inspirational' uses)</p> |
| <b>ACRONYMS</b>                                            | <p>CDA: Creative Dublin Alliance<br/>           CEO: Chief Executive Officer<br/>           DCC: Dublin city Council<br/>           EU: European Union<br/>           FDI: Foreign Direct Investment<br/>           FTE: Full time equivalent<br/>           IBM: North American IT company, 'International Business Machines Corporation'<br/>           IMF: International Monetary Fund<br/>           IT: Information Technology<br/>           NUIM: National University of Ireland Maynooth<br/>           R&amp;D: Research and Development</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
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## → URBACT II PROJECTS

| PROJECTS                                        | ISSUES ADDRESSED                                                                                        | LEAD PARTNERS                                |
|-------------------------------------------------|---------------------------------------------------------------------------------------------------------|----------------------------------------------|
| <b>1<sup>ST</sup> CALL PROJECTS (2008–2011)</b> |                                                                                                         |                                              |
| Active A.G.E.                                   | Strategies for cities with an ageing population                                                         | Rome – IT                                    |
| Building Healthy Communities*                   | Developing indicators and criteria for a healthy sustainable urban development                          | Torino – IT                                  |
| CityRegion.Net                                  | Urban sprawl and development of hinterlands                                                             | Graz – AT                                    |
| CoNet                                           | Approaches to strengthening social cohesion in neighbourhoods                                           | Berlin – DE                                  |
| Creative Clusters                               | Creative clusters in low density urban areas                                                            | Obidos – PT                                  |
| CTUR                                            | Cruise Traffic and Urban Regeneration of port areas                                                     | Naples – IT                                  |
| EGTC                                            | Sustainable development of cross-border agglomerations                                                  | Mission Opérationnelle Transfrontalière – FR |
| FIN-URB-ACT                                     | Small and medium enterprises and local economic development                                             | Aachen– DE                                   |
| HerO*                                           | Cultural heritage and urban development                                                                 | Regensburg – DE                              |
| HOPUS                                           | Design coding for sustainable housing                                                                   | University La Sapienza, Roma – IT            |
| JESSICA 4 Cities                                | JESSICA and Urban Development Funds                                                                     | Regional government of Tuscany – IT          |
| Joining Forces                                  | Strategy and governance at city-region scale                                                            | Lille Metropole – FR                         |
| LC-FACIL                                        | Implementing integrated sustainable urban development according to the Leipzig Charter                  | Leipzig – DE                                 |
| LUMASEC                                         | Sustainable land use management                                                                         | University of Karlsruhe – DE                 |
| MILE*                                           | Managing migration and integration at local level                                                       | Venice – IT                                  |
| My Generation                                   | Promoting the positive potential of young people in cities                                              | Rotterdam – NL                               |
| NeT-TOPIC                                       | City model for intermediate/peripheral metropolitan cities                                              | L'Hospitalet de Llobregat – ES               |
| Nodus                                           | Spatial planning and urban regeneration                                                                 | The generalitat of Catalonia – ES            |
| OPENCities*                                     | Opening cities to build-up, attract and retain international human capital                              | Belfast – UK                                 |
| REDIS                                           | Science districts and urban development                                                                 | Magdeburg – DE                               |
| RegGov*                                         | Integrated policies and financial planning for sustainable regeneration of deprived areas               | Duisburg – DE                                |
| REPAIR                                          | Regeneration of abandoned military sites                                                                | Medway – UK                                  |
| RUnUP                                           | Strengthening potential of urban poles with triple helix partnerships                                   | Gateshead – UK                               |
| SUITE                                           | Sustainable housing provision                                                                           | Santiago de Compostela – ES                  |
| UNIC*                                           | Promoting innovation in the ceramics sector                                                             | Limoges – FR                                 |
| URBAMECO*                                       | Integrated sustainable regeneration of deprived urban areas                                             | Grand Lyon – FR                              |
| Urban N.O.S.E.                                  | Urban incubators for social enterprises                                                                 | Gela – IT                                    |
| WEED                                            | Promoting entrepreneurship for women                                                                    | Celje – SI                                   |
| <b>2<sup>ND</sup> CALL PROJECTS (2009–2012)</b> |                                                                                                         |                                              |
| Active Travel Network                           | Promoting walking and cycling in small and medium-sized cities                                          | Weiz – AT                                    |
| CASH*                                           | Sustainable and affordable energy efficient housing                                                     | Echirolles– FR                               |
| ESIMeC                                          | Economic strategies and innovation in medium-sized cities                                               | Basingstoke and Deane – UK                   |
| EVUE                                            | Electric Vehicles in Urban Europe                                                                       | Westminster – UK                             |
| LINKS                                           | Improving the attractiveness and quality of life in old historical centres                              | Bayonne – FR                                 |
| OP-ACT                                          | Strategic positioning of small and medium-sized cities facing demographic changes                       | Leoben – AT                                  |
| Roma-Net*                                       | Integration of the Roma population in European cities                                                   | Budapest – HU                                |
| SURE                                            | Socio-economic methods for urban rehabilitation in deprived urban areas                                 | Eger – HU                                    |
| TOGETHER                                        | Developing co-responsibility for social inclusion and well-being of residents in European cities        | Mulhouse – FR                                |
| <b>3<sup>RD</sup> CALL PROJECTS (2012–2015)</b> |                                                                                                         |                                              |
| 4D Cities                                       | Promoting innovation in the health sector                                                               | Igualada – ES                                |
| CityLogo                                        | Innovative city brand management                                                                        | Utrecht – NL                                 |
| Creative SpIN                                   | Cultural and Creative Industries                                                                        | Birmingham – UK                              |
| CSI Europe                                      | Role of financial instruments (Jessica Urban Development Fund) in efficient planning                    | Manchester – UK                              |
| ENTER.HUB                                       | Railway hubs/multimodal interfaces of regional relevance in medium sized cities                         | Reggio Emilia – IT                           |
| EUniverCities                                   | Partnerships between cities and universities for urban development                                      | Delft – NL                                   |
| Jobtown                                         | Local partnerships for youth employment opportunities                                                   | Cesena – IT                                  |
| My Generation at Work                           | Youth employment with focus on enterprising skills and attitudes                                        | Rotterdam – NL                               |
| PREVENT                                         | Involving parents in the prevention of early school leaving                                             | Nantes – FR                                  |
| RE-Block                                        | Renewing high-rise blocks for cohesive and green neighbourhoods                                         | Budapest XVIII District – HU                 |
| Sustainable Food in Urban Communities           | Developing low-carbon and resource-efficient urban food systems                                         | Brussels Capital – BE                        |
| URBACT Markets                                  | Local markets as drivers for local economic development                                                 | Barcelona – ES                               |
| USEACT                                          | Re-utilizing existing locations to avoid land consumption                                               | Naples – IT                                  |
| USER                                            | Involving users and inhabitants in urban sustainable planning                                           | Agglomeration Grenoble Alpes Metropole – FR  |
| WOOD FOOTPRINT                                  | Local economic development through the (re)use of brownfield and buildings of the wood furniture sector | Paços de Ferreira – PT                       |
| <b>PILOT PROJECTS (2013–2015)</b>               |                                                                                                         |                                              |
| Diet for a Green Planet                         | Cooperation to align eating habits for an ecologically sustainable development                          | Södertälje – SE                              |
| ESIMeC II                                       | Economic strategies and innovation in medium sized cities                                               | Basingstoke and Deane – UK                   |
| EVUE II                                         | Electric Vehicles in Urban Europe                                                                       | Westminster – UK                             |
| Gastronomic Cities                              | Promoting gastronomy as a key urban development                                                         | Burgos – ES                                  |
| Genius: Open                                    | Creating innovative solutions to city challenges via an on-line collaborative platform                  | York – UK                                    |
| Healthy Ageing                                  | Cities' action for an active and healthy ageing                                                         | Udine – IT                                   |
| PlaceMaking 4 Cities                            | Useful public spaces instead of nice public spaces                                                      | Dún Laoghaire Rathdown County Council – IE   |
| Roma-Net II                                     | Integration of Roma populations                                                                         | Budapest – HU                                |
| TUTUR                                           | Temporary use as a tool for urban regeneration                                                          | Rome – IT                                    |

\*Fast Track Label

## **URBACT is a European exchange and learning programme promoting integrated sustainable urban development.**

It enables cities to work together to develop solutions to major urban challenges, re-affirming the key role they play in facing increasingly complex societal changes. URBACT helps cities to develop pragmatic solutions that are new and sustainable, and that integrate economic, social and environmental dimensions. It enables cities to share good practices and lessons learned with all professionals involved in urban policy throughout Europe. URBACT II comprises 550 different sized cities and their Local Support Groups, 61 projects, 29 countries, and 7,000 active local stakeholders. URBACT is jointly financed by the ERDF and the Member States.

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