

## II. INNOVATION PROCESS EMPIRICAL GUIDE (IPEG) TO INNOVATION PROCESS TYPES AND ASSOCIATED EXAMPLES<sup>6</sup>

### A. PURPOSE AND OBJECTIVE OF THE IPEG GUIDE

This chapter presents Innovation Process Empirical Guide (IPEG), an examples-based empirical guide to different process types for innovation that can be applicable to public sector innovation efforts. The innovation process types currently included in this version of IPEG are, in alphabetical order:

- bottom-up innovation;
- collaborative innovation;
- continuous innovation;
- disruptive innovation;
- frugal innovation;
- incremental innovation;
- local innovation;
- open innovation; and
- sustainable innovation.

The IPEG guide, is not an exhaustive list of all the process types, neither does it provide full details of the process types, as this is provided in available literature. The objective of this chapter, and the IPEG guide that follows, is to bring forward some basic information for each innovation process type, of practical value for public sectors interested in applying it, and complement this information with a rich set of indicative examples as well as with selected literature for further reading.

In this respect, the presentation structure of each innovation process type included in the IPEG guide is as follows:

- A working definition for this process type, deliberately kept simple, open, and focused on the characteristics that distinguish this process type from others;
- A rationale, in the form of one or more major arguments, for selecting this process type as the one to follow;
- Critical success factors (CSFs) for making innovation efforts along this process type bear fruit;<sup>7</sup>
- Risks associated to poor implementation or unwanted lateral effects of innovation efforts along this process type;
- Promises that implementation of innovation efforts along this process type brings along;
- Indicative examples of existing innovation efforts that may qualify under this process type (*see also* Annex 1 and Annex 2); and
- Sources for further reading (*see* Annex 3).

The examples<sup>8</sup> were drawn from:

- selected examples of public sector innovation from third countries presented in the corresponding chapters and annexes of the study, as well as discussed during the ESCWA-organized public sector innovation workshop (Cairo, October 2017)<sup>9</sup> in association with the study;

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<sup>6</sup> The chapter discusses some examples of innovation. Detailed information and sources on the discussed examples are given in Annex 1 for more information. Additional examples of each type of innovation is listed in Annex 2, while Annex three provide further readings on the various types of innovation.

<sup>7</sup> From the many factors involved in the success of innovation efforts, the factors identified herein for each process type as critical, are selected to fulfil two conditions: (a) their importance and subtleties may often go unnoticed; whereas (b) their absence or poor management may indeed lead an innovation effort away from success.

<sup>8</sup> The current version of the IPEG guide lists a total of 120 examples from the given sources, in line with its conception as an examples-based guide to innovation process types. These examples come from Arab Region public sectors and from countries all over the world in an approx.1:1 proportion, to keep a balance with enough examples from third countries, on the one hand, and allowing Arab Region public sectors to reflect on how their own work falls within different innovation process types, on the other.

<sup>9</sup> Workshop materials available from <https://www.unescwa.org/events/fostering-public-sector-innovation-arab-region>.

- selected examples from third-party collections such as the OECD Observatory for Public Sector Innovation<sup>10</sup>;
- the cases of innovation efforts sampled from ESCWA member country public sectors during the study as a response to a corresponding questionnaire; and
- selected cases of recent (2015 onwards) Arab Region public sector innovation efforts harvested in the context of the study from the Knowledge Base of UN Public Service Awards Initiatives<sup>11</sup>.

As a last point in this introductory discussion, it is interesting to bring forward the fact that, the question about the reasons behind the existence of many different innovation process types in the literature. Indeed, if we ask ourselves why are there many suggestions about different process types to follow when trying to innovate, instead of having the literature and practice converge in a single way to go, some possible answers are as follows:

An answer on the elusiveness of creativity

- innovation is a creative process; still, it is not easy to explain creativity, let alone to model the way it works, as we would have liked to.

An answer on the difficulty of empathy

- innovation is a process to make better things that can be useful to others, beyond ourselves; still, it is not easy to know what others want, neither is it easy to have on our own better ideas as to how achieving what others want, than the latter have themselves.

An answer on the fear of errors

- innovation is a process of trial and error; still, it is not easy to pay the costs of errors, and thus we feel the need for methods that will avoid errors and associated costs.

An answer on the self-gratification of helping others

- innovation promises a moment of happiness, once our ideas work, and this moment brings intense self-gratification which make us like it to happen again; thus, we are fond of abstracting our successful ways of work to models that others may uptake.

Each of these answers may explain, from a different aspect and to a different extent, the reasons that have led, and continue to lead, to the emergence of different process types for innovation. At the same time, all these answers are also denoting important psychological and social factors that appear in innovation efforts, no matter along which process type, in the form of felt challenges, drivers, barriers or enablers depending on our own standpoint and attitude. It is interesting to feed these answers, therefore, into a broader discussion of the different types of roles that various factors, and especially attitude and perception factors, play within innovation efforts.

## B. BOTTOM-UP INNOVATION

### 1. Description

Bottom-up innovation efforts can be considered as efforts that are conceived at lower responsibility and authority levels of an organizational structure and communicated upwards along organizational layers for approval.

**Table 1. Rationale, critical success factors, risks and promises of bottom-up innovation**

<b>Rationale</b>	<ul style="list-style-type: none"> <li>• people at the field level know better</li> </ul>
<b>Critical success factors</b>	<ul style="list-style-type: none"> <li>• people at lower organizational levels need to commit beyond formal responsibility</li> <li>• people at lower organizational levels need to embrace the big picture</li> </ul>

<sup>10</sup> More information is available from <https://www.oecd.org/governance/observatory-public-sector-innovation/>.

<sup>11</sup> Available from <https://publicadministration.un.org/en/Research/Case-Studies/unpsacases>.

<b>Risks</b>	<ul style="list-style-type: none"> <li>• the process may end up with ideas egocentric or otherwise fragmented</li> </ul>
<b>Promises</b>	<ul style="list-style-type: none"> <li>• innovations better suited to field-level realities</li> </ul>

Source: Consultant, original work for the study on Fostering Innovation in the Public Sectors of the Arab Region.

## 2. Examples<sup>12</sup>

### (a) Solar Sister – Eradicating energy poverty through social enterprise

(Country: International; Website: <http://www.solarsister.org/>)

Solar Sister is a social entrepreneurship project which is focused on a simple idea: allow women under poverty to operate as sellers of simple everyday-life solar photovoltaic equipment, such as solar lamps and solar mobile phone chargers, paying back for their merchandise after the latter is sold. The project builds on the MicroConsignment Model (MCM), originally developed by Greg van Kirk (later Ashoka Fellow) and George Bucky Glickley during their work as Peace Corps Volunteers in Guatemala during 2001-2003<sup>13</sup>. The basic idea of this model is to (a) engage rural poor people (mostly women) as entrepreneurs, to (b) deliver products and services of essential value, to (c) rural poor populations short of access to mainstream commerce, at (d) affordable prices, with the entrepreneurs themselves (e) not having to pay for their inventory before the latter is sold (thus avoiding an inherent need for credit and loans) and (f) earning a commission for each product sold<sup>14</sup>.



The Solar Sister project implemented the MCM approach for PV equipment starting with a pilot implementation in Uganda, in early 2010, and then developing in the broader East Africa region. At the same time, Solar Sister professionalized this approach by providing women entrepreneurs with training, promotional materials, simple record-keeping tools, as well as supporting product showcasing events. The current project team includes more than 50 people staffing central management as well as country teams in Uganda, Tanzania and Nigeria. According to the project's own impact data, some 2,500 people are currently engaged as entrepreneurs and some 700,000 people are benefiting, directly or indirectly, from project outcomes. At the same time, the project has a very systematic online presence, gathering some 24.5K followers on Twitter and 7.5K followers on Facebook, and being present on all major social platforms. Finally, Solar Sister takes a very active approach to fundraising, both through traditional donations and through disseminating fundraiser kits<sup>15</sup>.

The Solar Sister project combines, in a well-thought way, several good ideas, and clearly addresses at the same time more than one important global challenges, from poverty and gender equality to clean energy and social development. At the same time, the project idea and deployment has been based on approaches carefully selected for scalability and replicability, such as (a) the MCM model itself; (b) the think big-start small initial pilot implementation; (c) the thinking of under-privileged populations (rural poor people, women) not only as consumers but also as sellers of some essential products; and (d) the commodification of the latter, as allowed by maturing technology, into packaged affordable-cost PV products in this case. The real leapfrogging aspect of this project has not been at the investment/deployment scale, but rather at the conceptual paradigm shift towards the above approaches.

At the same time, this project qualifies as a bottom-up innovation effort since it is based on, and to an extent driven by, people in many ways: people as entrepreneurs, people as consumers, people as fundraisers and, eventually, people as supporters and as multipliers. In this respect, the Solar Sister project offers important innovation patterns that have the potential to be taken up by public sectors along different levels. A public sector could consider supporting this project not only (or even not at all) financially, but through public

<sup>12</sup> See Annex 2 for a list of other examples

<sup>13</sup> Van Kirk, 2008.

<sup>14</sup> Misra, 2011.

<sup>15</sup> Solar Sister, 2017.

structures and networks for energy, transport, education, health and other domains, to help it expand in scale and example reach, thus fostering social entrepreneurship overall, and showcasing the idea that part of a public sector's innovation vision also has to do with helping social innovation happen and scale up. Secondly, a public sector could uptake not the Solar Sister project itself, but rather the principles underpinning it. The MCM model, for instance, could be used to drive public-people (or public-women) partnerships for delivering basic public goods (e.g. essential medications) or services (e.g. basic training) to areas and populations that central administrations have difficulty to address.

(b) *Project Isizwe – Free Wi-Fi for South Africa*

(Country: South Africa; Website: <http://www.projectisizwe.org/>)

Project Isizwe, launched in 2013, is a South Africa-based non-profit initiative to empower local communities with internet access. The project advocates for free wi-fi access in public places all over Africa, and has achieved a partnership with the City of Tshwane (Pretoria) in Gauteng Province. The City of Tshwane, with a population of some 2.9 million residents (2011 census data<sup>16</sup>) and a surface area of approx. 6,300 sq.km has deployed an online site<sup>17</sup> rich with information and services, as well as the e-Tshwane portal<sup>18</sup> for payment and transactional services.



In this context, Project Isizwe reports creating in the City of Tshwane area some 1,070 free internet zones (FIZs) near high-visibility public places of education (schools, universities, libraries) and community interest (community centres, parks), allocating users with a free daily access volume of 500MB per device, at a minimum bandwidth of 15Mbps download and 1Mbps upload speed, currently serving some 600,000 unique monthly users, and having overall served more than 6,000TB of download and 600TB of upload data volume.<sup>19</sup>

Project Isizwe, based on a collaboration with the City of Tshwane and commercial mobile operators, explicitly prioritizes low-income regions and communities, and focuses on providing the capability to access educational content online. At the same time, the project has developed plans for a pilot installation in Cape Town (Khaye-fi project plan<sup>20</sup>), and an expansion in other regions over the country (Afri-fi project plan<sup>21</sup>), whereas it actively supports the World Wi-Fi Day initiative.<sup>22</sup>

Project Isizwe comprises an interesting example of clear objectives, clear model and a lot of belief and enthusiasm to provide free wi-fi access to underprivileged people, and especially so for allowing them access to education and development opportunities. In this sense, Project Isizwe is indirectly, yet clearly, addressing SDGs on education, socio-economic development, reduction of poverty, as well as equality. At the same time, and given the fact that free access to the internet, as simple and self-evident as it may sound, remains an innovative idea, that can fuel in its turn many more consequent bottom-up innovation efforts, Project Isizwe is itself presented here as an example of bottom-up innovation enabler and bottom-up innovation in its own right. Public sectors may clearly consider joining such efforts, where these are launched by the third sector, working together with the third sector to launch and sustain them, as well as use their own online content and services to bring more added value to free Wi-Fi-enabled internet users.

<sup>16</sup> Statistics South Africa, 2011.

<sup>17</sup> See <http://www.tshwane.gov.za/Pages/default.aspx>.

<sup>18</sup> See <https://www.e-tshwane.co.za/eTshwane/>.

<sup>19</sup> Project Isizwe, 2017

<sup>20</sup> More information available from <http://www.projectisizwe.org/khaye-fi/>.

<sup>21</sup> More information available from <http://www.projectisizwe.org/afri-fi/>.

<sup>22</sup> More information available from <http://worldwifeday.com/>.

## C. COLLABORATIVE INNOVATION

### 1. Description

Collaborative innovation efforts can be considered as efforts in which people source and evaluate ideas that are prescribed on a broader organizational role/layer basis, and selected later during the process, the latter being communicated to them in terms of importance to participate.

**Table 2. Rationale, critical success factors, risks and promises of collaborative innovation**

<b>Rationale</b>	<ul style="list-style-type: none"> <li>the issues to tackle cross organizational levels and specializations</li> </ul>
<b>Critical success factors</b>	<ul style="list-style-type: none"> <li>participants need to work jointly rather than in parallel</li> <li>leadership needs to drive collaboration in a rigorous way</li> </ul>
<b>Risks</b>	<ul style="list-style-type: none"> <li>ideas may sum up partial interests, rather than synthesize them</li> </ul>
<b>Promises</b>	<ul style="list-style-type: none"> <li>innovations with all aspects worked out, backed up with consensus</li> </ul>

Source: Consultant, original work for the study on Fostering Innovation in the Public Sectors of the Arab Region.

### 2. Examples

#### (a) TAXISnet services

(Country: Greece; Website: <http://www.gsis.gr/>)

The TAXISnet project in Greece comprises the country's national single-window project for electronic citizens and business taxation services, including information about tax obligations, electronic filing and archiving of tax forms. Over the years, TAXISnet has deployed some 20 electronic services of interest to citizens and some 10 electronic services of interest to businesses<sup>23</sup>, ranging from some essential services pertinent to all taxpayers, such as filing of income tax and VAT return forms, to more specialized audience-specific services such as reimbursement of election commission members and contract-making related services for accredited notaries.



At the same time, TAXISnet interoperates with a few financially-related electronic services of other sectors, such as health subsidies, unemployment benefits and fiscal transparency declarations, given that the data register of TAXISnet is one of the more complete and updated across the Greek public sector, which allows to use TAXISnet logon credentials as a single sign-on instrument for other services as well. Initially deployed by the General Secretariat of Information Systems and Administrative Support of the Greek Ministry of Finance<sup>24</sup> during 1999-2001, as of 2017 TAXISnet is available under the operational responsibility of the Greek Independent Authority for Public Revenue.<sup>25</sup>

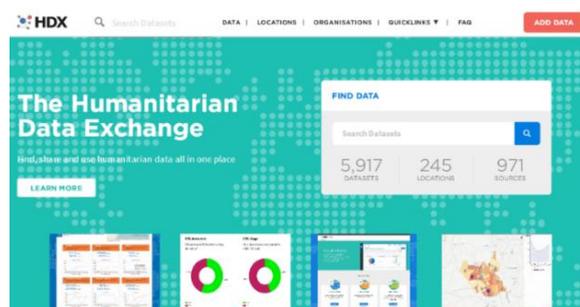
More information about the development and evolution of this domain-specific public sector innovation effort can be found on the reference website as well as in the further information sources below. At the same time, the main interest of this effort that allows it to qualify as a collaborative innovation example has been its deployment along several public-private partnerships (e.g. between the Greek Ministry of Finance, professional accountants' associations and the banking system), as well as public-public partnerships, between different branches of the Greek public sector. This is an aspect inherent in innovation efforts in the taxation and fiscal policy domains in many countries, and TAXISnet in this respect represents a typical example.

<sup>23</sup> More information is available from [http://www.gsis.gr/gsis/info/gsis\\_site/Services](http://www.gsis.gr/gsis/info/gsis_site/Services) (in Greek).

<sup>24</sup> More information is available from <http://www.minfin.gr/web/guest/portal-g.g.4>.

<sup>25</sup> More informaton is available from <http://www.aade.gr/>.

(b) *The Humanitarian Data Exchange (HDX)*  
 (Country: International; Website: <https://data.humdata.org/>)



## D. CONTINUOUS INNOVATION

### 1. Description

Continuous innovation efforts can be considered as efforts that effectively deploy a specific innovation and, to keep it enhanced with innovative aspects, establish permanent processes for evolution.

**Table 3. Rationale, critical success factors, risks and promises of continuous innovation.**

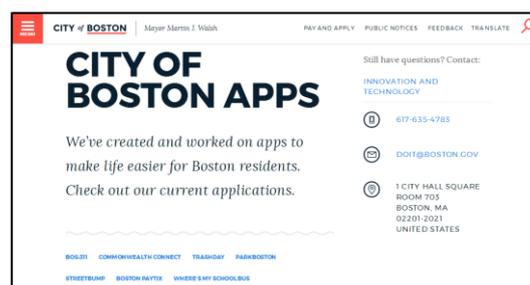
<b>Rationale</b>	<ul style="list-style-type: none"> <li>needs are changing continuously, and a continuous evolution is needed beyond the needs currently known</li> </ul>
<b>Critical success factors</b>	<ul style="list-style-type: none"> <li>the notion of continuous evolution needs to be effectively communicated and operationalized</li> <li>evolution needs to move on even at times of no pressing needs</li> </ul>
<b>Risks</b>	<ul style="list-style-type: none"> <li>considering success as an excuse for slowing down, rather than a reason for keeping up</li> </ul>
<b>Promises</b>	<ul style="list-style-type: none"> <li>time will become a friend that makes things better, rather than a foe that imposes deadlines</li> </ul>

Source: Consultant, original work for the study on Fostering Innovation in the Public Sectors of the Arab Region.

### 2. Examples

(a) *City of Boston Citizen Connect Apps*  
 (Country: USA; Website: <https://www.boston.gov/departments/innovation-and-technology/apps>)

The City of Boston, capital and largest city of Massachusetts, USA, has a core population of 660,000 (2016) inhabitants.<sup>26</sup> At the same time, the city is central to the Greater Boston urban agglomeration, with an estimated population of more than 4 million<sup>27</sup>, and more than 8 million when commuters are considered.<sup>28</sup> In this respect, the City of Boston represents a dynamic example of USA cities that strive to manage their current state of needs and offerings, as well as improve their services and prospects to current and would-be residents.



The City of Boston Innovation and Technology Department (CoB I&TD) focuses on maintaining and improving the City's communication infrastructure with equity for all residents, tracking project progress and service needs through data analytics, as well as providing enterprise applications for CoB departments and digital engagement services for Boston residents. In this respect, the CoB I&TD has deployed a series of mobile apps, under the central motto of "making life easier". These include apps for reporting non-emergency issues (BOS:311), having problems reported by commuters who may not know who to contact in local

<sup>26</sup> Wikipedia, 2017.

<sup>27</sup> DESA, 2016.

<sup>28</sup> World Population Review, 2017.

administrations (Commonwealth Connect), reminding of trash collection schedules and recyclable materials (Trashday), make mobile payments for parking (ParkBoston, Boston PayTix), collect real-time data about poor road conditions (StreetBump), as well as tracking school buses (Where’s my school bus). All these are available as cross-platform smartphone apps, or in online versions. The CoB I&TD has developed these through insourcing, and publicly invites ideas for new apps that should be offered.<sup>29</sup>

What makes this example interesting is the fact this effort is focused on controlled-scale practical services, for everyday life needs well beyond the high politics agenda, which may still be quite important for the service recipients. An online application to track school buses, for instance, is not only a matter of saving time and avoiding waiting outdoors under bad weather but, even more importantly, a matter of students’ safety as well.

At the same time, what makes this example qualify as a continuous innovation effort is the fact that these services comprise a series of new improved offerings to city residents which the City of Boston develops over time, disproving the view that grand one-off innovation projects are the only way to go. Clearly, the more this effort stands the test of time the more it helps an innovation culture to install itself, thus fostering continuity of the innovation process.

## E. DISRUPTIVE INNOVATION

### 1. Description

Disruptive innovation efforts can be considered as efforts that meet two or more of the following characteristics: (a) bring forward large changes and/or changes with large lateral effects, (b) do so at a fast (with respect to the size of changes) pace over time, and (c) establish new ways of work in replacement of existing ones, setting a fixed and possibly pressing for the latter to become abandoned.

**Table 4. Rationale, critical success factors, risks and promises of disruptive innovation**

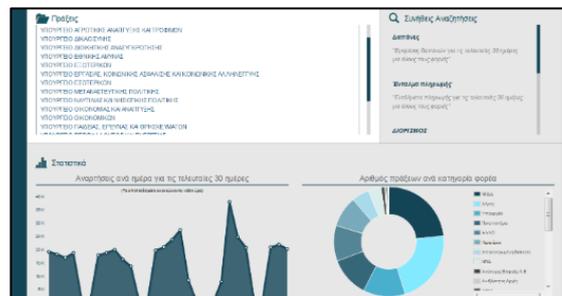
<b>Rationale</b>	<ul style="list-style-type: none"> <li>• problems are too interlinked to solve one at a time, the Gordian knot needs cutting</li> <li>• too much time has passed unused, everything needs to change now</li> </ul>
<b>Critical success factors</b>	<ul style="list-style-type: none"> <li>• change towards the environment needs to be managed smoothly during uptime, without creating chaos</li> <li>• people inside and outside need to be helped to disrupt their own culture and habits</li> </ul>
<b>Risks</b>	<ul style="list-style-type: none"> <li>• too many / too fast changes with unexplored consequences may create problems that defame innovation</li> </ul>
<b>Promises</b>	<ul style="list-style-type: none"> <li>• everything will be better, before the past has time to resist</li> </ul>

Source: Consultant, original work for the study on Fostering Innovation in the Public Sectors of the Arab Region.

### 2. Examples

#### (a) Diavgeia Transparency Portal (Country: Greece; Website: <https://diavgeia.gov.gr/>)

The Greek Diavgeia Transparency Portal was launched in July 2010<sup>30</sup> as a central instrument for the Transparency Program initiative of the Greek Government. According to the legislative measures supporting this initiative, all Greek Government institutions, as of October 2010, are obliged to upload their acts and decisions online on the Diavgeia portal, with attention paid to special cases of data of sensitive personal and national security nature. As a second step, 3 years later, in 2013, all administrative acts and decisions not published online have ceased being valid. By March 2011, within 5 months of its launch,



<sup>29</sup> City of Boston, 2017

<sup>30</sup> Institute of Computer Science, 2017.

ministries, public sector bodies and independent authorities', as well regional and local authorities, phased in the Diavgeia framework and transparency obligation.<sup>31</sup>

Today it concerns all legal entities under public law including universities and other institutions. A total of 26.3 million administrative acts and decisions have been published on Diavgeia portal within 7 years, whereas the average publication rate during 2017 amounts to some 345,000 acts and decisions monthly<sup>32</sup>. The Diavgeia and the Greek Transparency Program initiative have comprised one of the country's national commitments to the Open Government Partnership, which Greece joined in 2011<sup>33</sup>.

The Diavgeia initiative is directly addressing goals of transparent access to information and citizens' right to know about government decisions and acts. At the same time, it comprises an example of forced transparency, in the sense that it has been decided and planned at the top-level of government, with all ministries called in to contribute. This forced aspect of the Diavgeia initiative, coupled with the 2013 turning-point disruption of acts and decisions not published on Diavgeia declared invalid, has been the source of criticisms and frustrations on the side of public sectors that have been faced with the obligation to comply with this new way of work, and allocate human resources dedicated to the task of uploading acts and decisions on the Diavgeia portal. An additional factor for this is the large number of acts and decisions produced by Greek public bodies, which currently amounts to more than 15,000 acts/decisions per working day, a number rather elevated for a country of approx. 11 million residents (49 per cent male and 51 per cent female) according to 2014Q1 census revision data<sup>34</sup>.

At the same time, the large number of documents uploaded on the Diavgeia portal, coupled with the complicated legal form of administrative acts and decisions, has resulted in negative criticisms on the side of citizens as well, who lack services to make meaningful analyses of this information, beyond simple document retrieval and aggregate document uploading statistics. This has given rise to third-party efforts for deploying added value services over the Diavgeia OpenData API<sup>35</sup>, such as UltraCl@rity<sup>36</sup> and others. It needs to be noted, however, that despite these practical criticisms, which certainly have grounds, the Diavgeia portal and the Transparency Initiative program have spearheaded a series of reforms to establish an anti-secrecy and anti-corruption culture shift in the workings of the Greek public sector.

The interest of this example, which qualifies as one of disruptive innovation for better governance, lies exactly in the contradictions described above. As the Diavgeia case shows, simple forms of transparency, in the sense of raw information disclosure, are not technically complicated to achieve, and transliterating this simplicity at the level of political will can well lead to decisions for disruptive innovation, especially in contexts where it is felt that public sectors carry on burdens of shortcomings and deficiencies from the past. Still, for such disruptive decisions and forced policies to stand the test of time, it is important to back them up with substantial support for the people that will be called to enact them in everyday life public sector practice, as well as for the citizens who will seek to find the added value that has been promised. In the absence of such support, the main driver that remains to sustain such disruptive innovations is legal enforcement, which is an obligation-rather than motivation-based instrument and cannot always be guaranteed to bring forward the best possible outcomes on the long term.

## F. FRUGAL INNOVATION

### 1. *Description*

Frugal innovation efforts can be considered as efforts that bring forward small-sized and low-cost changes that may have a multiplier effect and/or desirable impacts positively disproportionate to the budget and resource

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<sup>31</sup> Informatics Development Agency, 2013.

<sup>32</sup> Informatics Development Agency, 2013.

<sup>33</sup> More information available from <https://www.opengovpartnership.org/countries/greece>.

<sup>34</sup> Hellenic Statistical Authority, 2014.

<sup>35</sup> More information available from <https://diavgeia.gov.gr/api/help>.

<sup>36</sup> More information available from <https://yperdiavgeia.gr/>.

consumptions that they demand; and/or remove non-essential features to make something more accessible or affordable.

**Table 5. Rationale, critical success factors, risks and promises of frugal innovation efforts.**

<b>Rationale</b>	<ul style="list-style-type: none"> <li>• instead of trying to entirely change something complicated, start by identifying small isolated changes that accumulate to a meaningful improvement</li> <li>• to improve does not only mean to add something new, but also to remove something that adds complexity but not real value</li> </ul>
<b>Critical success factors</b>	<ul style="list-style-type: none"> <li>• the changes to effect, although small and simple, need to be meaningful</li> <li>• the changes to effect need to have no undesirable lateral effects</li> </ul>
<b>Risks</b>	<ul style="list-style-type: none"> <li>• considering frugal as a synonym to cheap, and making low cost a priority over real value</li> </ul>
<b>Promises</b>	<ul style="list-style-type: none"> <li>• if we are ingenious enough and understand something well enough, we can find small changes that can make a big difference</li> </ul>

Source: Consultant, original work for the study on Fostering Innovation in the Public Sectors of the Arab Region.

## 2. Examples

(a) *Twitter account of the Disaster Management Unit of Municipal Corporation of Greater Mumbai*  
(Country: India; Website: <https://twitter.com/disastermgmtmum?lang=en>)

Mumbai, capital of the state of Maharashtra, India, has an estimated metropolitan population of more than 21 million people (2016 data), which makes it the most populous city in India (after Delhi) and one of the most populous urban areas in the world (ranking 4th according to 2016 UN data)<sup>37</sup>. The population density of the City of Mumbai is one of the highest in the world, currently estimated to more than 30,000 people per square kilometre<sup>38</sup>. At the same time, India is one of the countries of the world particularly affected by natural disasters. Of the latter, floods are the most frequent (at more than 50 per cent) and damaging, accounting for some 30 per cent of life losses and more than 65 per cent of economic issues<sup>39</sup>. In this context, disaster management at the city level is clearly critical.



At the same time, internet penetration in India is growing fast. According to CIA Factbook data<sup>40</sup>, mobile subscriptions have surpassed 1.1 billion; according to India government data urban internet subscribers in the state of Maharashtra exceeded 19 million as of January 2016<sup>41</sup>, whereas according to third sources the total number of internet subscribers in the state exceeded 29 million as of March 2016, becoming the highest in the country<sup>42</sup>. Regarding social media penetration, Facebook subscribers are estimated to 241 million as of June 2017<sup>43</sup>, whereas the number of Twitter subscribers was estimated at 22 to 23 million during 2016<sup>44</sup>. Still, according to more recent (May 2017) third sources, during 2017Q1 India has become the fastest growing market for Twitter worldwide in terms of daily active users<sup>45</sup>.

The Municipal Corporation of Greater Mumbai, responsible for managing the City of Mumbai and offering public services, has gone online since June 2003 and is currently offering several transactional e-government services through the mcgm.gov.in portal, including some single-window offerings such as film shooting

<sup>37</sup> DESA, 2016.

<sup>38</sup> The Hindu Business Line, 2017.

<sup>39</sup> PreventionWeb, 2014.

<sup>40</sup> Central Intelligence Agency, 2017.

<sup>41</sup> Government of India, 2016.

<sup>42</sup> The Hindu Business Line, 2017.

<sup>43</sup> Miniwatts Marketing Group, 2017.

<sup>44</sup> HuffPost, 2016.

<sup>45</sup> Chaturvedi, 2017.

(Mumbai being a major pole for India’s film industry) and outdoor event permissions<sup>46</sup>. MCGM has established a Disaster Management Unit, set up in 1999 at the level of the Municipal Head Office with a core mission to handle disasters and emergency situations. This is also reflected in DMU’s main functions and objectives, of which an important part has to do with preparedness, alerting and communication. Flood incidents comprise the major type of disasters to be handled.

In this context, the MCGM Disaster Management Unit has set up and operates two social media accounts, on Facebook<sup>47</sup> and Twitter<sup>48</sup>. Both accounts host daily updates (mirrored for the most part) for weather forecasts and tide levels, as well as heavy rain alerts. At the same time, the Twitter account is additionally used to update the public about handling of eventual violent incidents that may result in injuries and life losses. The DMU Facebook account has currently acquired some 400 likes and an equal number of followers, whereas data on the total number of posts and launch date are not available. The DMU Twitter account, on the other hand, has acquired more than 36,000 followers and published some 4,600 tweets since February 2013 when it was launched, at an average tweeting rate of 2.65 tweets per day. The difference in the followership of these two accounts, which is disproportional (even inverse) to the penetration of the corresponding social platforms indicated by the data provided above, may be explained by several factors. The most important of these is the appropriateness and immediacy of Twitter on mobile devices as an instant and handy information outlet in case of emergencies.

The main interest of the DMU Twitter account as a case of public sector innovation lies in the shift of thinking which leads a public sector to open its practice to using new media as a disaster management and crisis communication tool. Indeed, Twitter as a medium is ideal for that purpose, due to the fact that it is at the same time (a) social, in the sense of supporting networking and instant diffusion of messages to contacts; (b) accessible through mobile devices and thus allowing to reach users on the move, unlike other mass media such as television, radio and even the internet that are more or less addressing stationed users; and (c) tailored to short messaging, which facilitates first-message and brief information diffusion. Consequently, in contexts where Twitter has achieved an important user base, it can be considered as a very convenient instrument for public sectors to innovate their message diffusion practices. At the same time, this example qualifies as one of frugal innovation, mainly because of its simplicity to implement. In fact, given that client-side infrastructure (internet coverage, internet-enabled mobile phones and Twitter app) is already in place, the only costs and complexity that remain for a public sector to handle are to setup an appropriate communication strategy and staff a small group of operators to run and monitor this channel.

## G. INCREMENTAL INNOVATION

### 1. Description

Incremental innovation efforts can be considered as efforts that focus on effecting a series of small innovative improvements, one at a time, using the achievement of some set objectives as concept of success.

**Table 6. Rationale, critical success factors, risks and promises of incremental innovation**

<b>Rationale</b>	<ul style="list-style-type: none"> <li>• innovation costs need to be proportionate to some set objectives</li> <li>• not too many innovations need to be affected at the same time</li> </ul>
<b>Critical success factors</b>	<ul style="list-style-type: none"> <li>• out of many innovations increments possible at some point, the right one needs to be chosen for realization</li> </ul>
<b>Risks</b>	<ul style="list-style-type: none"> <li>• keeping increments proportionate to set objectives may not allow some nice and bigger-scale ideas to find their way to realization</li> </ul>
<b>Promises</b>	<ul style="list-style-type: none"> <li>• innovation, wisely used, can achieve objectives without wasting resources</li> </ul>

Source: Consultant, original work for the study on Fostering Innovation in the Public Sectors of the Arab Region.

<sup>46</sup> Municipal Corporation of Greater Mumbai, 2017.

<sup>47</sup> For more innovation visit <https://www.facebook.com/DisasterManagementUnitMumbai/>.

<sup>48</sup> For more innovation visit <https://twitter.com/DisasterMgmtMum>.

## 2. Examples

### (a) Resilient City Strategy of the City of Byblos

(Country: Lebanon; Website: <http://www.resilientbyblos.org/>)

Byblos is a small Mediterranean city in north-western Lebanon, with a population estimate of approx. 27,000 urban residents going up to some 100,000 metropolitan inhabitants, and a surface area of 10 sq.km for the core urban zone, expanding to 17 sq.km for the metropolitan area<sup>49</sup>. The Byblos port is considered one of the oldest ones in the world, given that the history of the City of Byblos goes back to prehistorical times, with the first inhabitants believed to have arrived at least by the Neolithic Period (c.8000-c.4000BC) and an important settlement developed during the 4th millennium BC<sup>50</sup>. Due to its outstanding universal value, the City of Byblos was designated as a UNESCO World Heritage Site in 1984.<sup>51</sup> Emergency safeguarding actions were taken in 2006 and 2010, following the Lebanon war crisis and due to ecological damage<sup>52</sup>. At the same time, the city has undergone further crises such as the Zina winter storm hit in January 2015, as well as the need to accommodate many Syrian refugees (some 5,500 refugees registered as of December 2014)<sup>53</sup>.



The City of Byblos has collaborated with the 100 Resilient Cities project and joined the 100RC network in December 2013, to develop and implement a strategy for improving its current infrastructures and withstand future crises. The 100 Resilient Cities project, funded by The Rockefeller Foundation, provides cities with support to become resilient in the face of natural disasters as well as endemic problems and stresses, from water-food-energy nexus security issues to unemployment and public service inefficiency problems. In this respect, cities joining the 100RC network are provided with support for establishing resilience responsibility within their city governance structure in the form of a Chief Resilience Officer position (CRO), develop a resilience strategy and access potential public, private and NGO partners who can help with implementation, as well as network and exchange expertise with other 100RC cities. The current 100RC Network encompasses 98 cities, dispersed around in more than 50 countries worldwide.<sup>54</sup>

In this respect, the ResilientByblos.org website has been set up<sup>55</sup>, and the 2-year City of Byblos Resilience Strategy was announced in April 2016. According to this strategy (100 Resilient Cities 2016), Byblos sets out to become a connected, resource efficient, peaceful, cultural and thriving city, through innovative and inclusive solutions for urban and ecosystem services, social cohesion, cultural diversity, local identity as well as diversified economic development. To this end, 13 goals have been identified and translated into 33 specific actions, most of which are owned by the Byblos Municipality. At the same time, a Facebook account for Byblos Resilient City has been created on September 2014 and had 230 followers at the time of writing.<sup>56</sup>

This example presents an interesting case of how a small municipality, under-resourced in a few ways with respect to the challenges faced, still arrives at thinking about ways of making things better for its citizens and residents. Two important factors can be identified in this effort: firstly, the contact with a network, which can support with methodology and implementation knowhow, as well as with further networking with peers; and secondly, the focus on innovation and inclusion, as two pillars for making things better for all. Inclusion plays a critical role in this case, given the multinational and multicultural origins of the City of Byblos citizens and newly-settled residents.

<sup>49</sup> Resilient Byblos, 2016; 100 Resilient Cities, 2016.

<sup>50</sup> Wikipedia, 2017; Encyclopædia Britannica (eds.), 2007.

<sup>51</sup> UNESCO, 2017.

<sup>52</sup> UNESCO, 2010.

<sup>53</sup> 100 Resilient Cities, 2016.

<sup>54</sup> 100 Resilient Cities, 2017.

<sup>55</sup> 100 Resilient Cities, 2016.

<sup>56</sup> See <https://www.facebook.com/Byblosresilientcity/>.

At the same time, this example qualifies as one of incremental innovation, because the strategy developed is not based on a big-bang approach to deploy one-off large-scale projects, but rather at small increments (embodied in actions, which contribute to goals) to bring positive change in small chunks, one at a time. It can be noted that this approach is also reflected in the development process and the final formulation of the city resilience strategy itself, which has evolved through successive steps of controlled ambition. This example, therefore, offers several interesting principles for public sectors to uptake, whether concerned with resilience at city level or broader, or with incremental innovation in more general contexts.

(b) *Estonia Digital ID Card*

(Country: Estonia; Website: <https://e-estonia.com/solutions/e-identity/id-card/>)

Estonia, with a population of some 1.3 million residents<sup>57</sup> and a surface area of approx. 45,000 sq.km<sup>58</sup>, represents one of the newest and smallest countries of Europe. Still, Estonia has achieved an advancement in e-government and e-participation services positively disproportionate to its small geographical size, setting an example at a global scale. In the 2016 UN E-Government Survey, Estonia is globally ranked 22nd in the best e-participation performers for 2016, and 13th in terms of Online Service Index (OSI) and E-Government Development Index (EGDI) levels.<sup>59</sup>



The Digital ID Card represents a flagship project of Estonian Government to drive the country onwards to a new generation of electronic services and digital transformation and has resulted in 3 distinct products, available to all Estonian citizens irrespective of their location: a conventional ID card equipped with a digital chip containing 2048-bit public key encrypted holder identifying information and personal data files; a Mobile-ID SIM card, available from commercial mobile operators, which allows the holder to use her/his mobile phone as identification instrument; and a Smart-ID mobile app which allows a mobile phone to be used as identification instrument even in the absence of a SIM card<sup>60</sup>.

These solutions to secure identification, perhaps the single most important issue for the advancement of e-government services, are not devoid of problems. There are incidents, for instance, where the Estonian state has decided to block the certificates of a great number of ID cards asking their holders to renew them, for fear of identity theft<sup>61</sup>. Still, these problems come along with unprecedented opportunities for innovative service offerings, such as the e-residency service<sup>62</sup>. The latter allows citizens and business from all over the world to acquire a valid Estonian digital ID to allow them to transact with the Estonian state and thus set up companies registered under Estonian law and tax regime, thus moving towards the de-territorialisation of citizenship.

More information on the above developments and their different aspects and implications may be found in the e-Estonia e-identity website and the sources provided below. At the same time, what makes this example interesting and qualifying as a case of incremental innovation, is the capability, once a digital identification infrastructure is in place, to increment digital IDs with new service offerings, one offering at a time, in a simple and essential way. This in fact could be considered as one of the major strengths of this example, which can be taken up in public sector innovation efforts. At the same time, the cross-border interoperability and service potential that such an identification solution brings along should not go unnoticed, especially in cases of countries that already share, beyond common borders, also common languages and cultures, such as the Arab Region countries.

<sup>57</sup> Available from <https://www.stat.ee/population>.

<sup>58</sup> The World Bank, 2017b.

<sup>59</sup> Division for Public Administration and Development Management, 2016.

<sup>60</sup> e-Estonia, 2017.

<sup>61</sup> ID.ee, 2017.

<sup>62</sup> e-Estonia, 2017.

## H. LOCAL INNOVATION

### 1. Description

Local innovation efforts can be considered as efforts that are explicitly focused on improving a specific local aspect (service, product, way of work), taking stock of elements unique to the corresponding local geography and context.

**Table 7. Rationale, critical success factors, risks and promises of local innovation**

<b>Rationale</b>	<ul style="list-style-type: none"> <li>local problems can best be solved by considering the local context</li> </ul>
<b>Critical success factors</b>	<ul style="list-style-type: none"> <li>the local context needs to be considered selectively, needs are different than interests</li> <li>local factors need to be considered creatively, and taken up as opportunities rather than shortcomings for innovation</li> </ul>
<b>Risks</b>	<ul style="list-style-type: none"> <li>local solutions may lack broader value in terms of generality and scalability</li> <li>local solutions may jeopardize shared resources with tragedy of commons effects</li> </ul>
<b>Promises</b>	<ul style="list-style-type: none"> <li><i>innovative solutions readily adapted to uptake by local communities</i></li> </ul>

Source: Consultant, original work for the study on Fostering Innovation in the Public Sectors of the Arab Region.

### 2. Examples

#### (a) Porto Alegre Prefecture Participatory Budgeting

(Country: Brazil; Website: <http://www2.portoalegre.rs.gov.br/op/>)

Porto Alegre, the capital of the state of Rio Grande do Sul in Brazil, is one of the country's largest cities and metropolitan areas, with a population of more than 1.4 million people<sup>63</sup>, raised to an estimate of more than 4 million for the metropolitan area, and an urban area of approx. 500.000 sq.km.<sup>64</sup>. The unique geographic positioning of the city near the Atlantic Ocean coast at the junction of five rivers has been a factor of growth<sup>65</sup> since its founding during the eighteenth century, up until modern times. In recent years, Porto Alegre has been hosting to the first edition of the World Social Forum<sup>66</sup> in 2001, as well as to the Fórum Internacional Software Livre (FISL) annual event on free software<sup>67</sup> since 2000, establishing itself as a centre for social participation and open innovation thinking in practice.



Porto Alegre has now become famous for the organizing in 1989 at municipal level the first participatory budgeting (PB) process globally<sup>68</sup>, and keeping this project alive ever since. Official information for this project and the annual processes and decisions taken is available both on the Porto Alegre Prefecture website<sup>69</sup>, as well as through Twitter account OP Porto Alegre (@OPPOA)<sup>70</sup>, both in Portuguese. As explained in the Participatory Budgeting Project website, Participatory Budgeting is “...a democratic process in which community members directly decide how to spend part of a public budget. It enables taxpayers to work with government to make the budget decisions that affect their lives.”<sup>71</sup>. A PB process does not have to be legally binding for the budgeting authorities, nor require legal changes on behalf of the latter. At the same time, to such a process to be legitimate and successful, it needs to be embraced by the authorities, who can help by communicating it to the people, decide on the percentage of budget that they may allow to be decided through PB, and commit to honoring the results of the PB process. Finally, PB processes do not need to rely heavily

<sup>63</sup> United Nations, 2017.

<sup>64</sup> For more information go to [https://en.wikipedia.org/wiki/Porto\\_Alegre](https://en.wikipedia.org/wiki/Porto_Alegre).

<sup>65</sup> For more information go to <https://www.britannica.com/place/Porto-Alegre>.

<sup>66</sup> For more information go to <http://www.forumsocialmundial.org.br/>.

<sup>67</sup> For more information go to <http://softwarelivre.org/>.

<sup>68</sup> Participatory Budgeting Project, 2017. <https://www.dandc.eu/en/article/participatory-budgeting-about-every-voice-being-heard>.

<sup>69</sup> Available from <http://www2.portoalegre.rs.gov.br/op/>.

<sup>70</sup> Available from <https://twitter.com/oppoa>.

<sup>71</sup> Participatory Budgeting Project, 2017.

on technology and online deliberation; on the contrary, they are typically based on physical assemblies and face-to-face contact and discussion, exactly with a view to including all people, even those that may have no online access.

Participatory budgeting processes, once discussed as an idea that could even risk political turmoil and chaos, have gradually been institutionally embraced and accepted by public authorities world-wide as a standard vehicle of public participation and a framework of social innovation, given that they allow citizens to propose funding of new services and novel ideas best suited to their needs. Websites such as the Participatory Budgeting Project Resource Center<sup>72</sup> provide resources for planning and running PB processes at different levels, from regional/municipal down to intra-organizational (e.g. in schools), whereas sources like the online map<sup>73</sup> developed by Tiago Teixeira, now at the World Bank, and the Participedia case lists<sup>74</sup> provide examples from all continents. As much as these processes require careful planning and curation for bearing fruit, they are not devoid of problems related to sparse participation, diverging/ego-centric priorities of participants, as well as failure to agree with the authorities on what is important to prioritize and fund<sup>75</sup>. Still, they undoubtedly contribute to innovating the budgeting process itself as well as the budgeting decisions in an open way, and thus moving on in the more general direction of citizen budgets<sup>76</sup>, open budgets and budget transparency<sup>77</sup>. In this respect, participatory budgeting constitutes an example that can qualify under the types of open (and, in most cases, local) innovation, and could be considered by interested public sectors for up-taking in their own local constituencies along small-scale pilot projects.

(b) *City of Boston Citizen Connect Apps*  
(Country: USA; Website: <https://www.boston.gov/departments/innovation-and-technology/apps>)

See description in D.2.a.

## I. OPEN INNOVATION

### I. Description

Open innovation efforts can be considered as efforts in which the people to source and evaluate ideas are prescribed in terms of minimum profiles that are also met beyond organizational boundaries by external contributors, to present themselves without formal commitments at any stage during the process, the latter being communicated to them in terms of opportunity to shape solutions.

**Table 8. Rationale, critical success factors, risks and promises of open innovation**

<b>Rationale</b>	<ul style="list-style-type: none"> <li>• conventional wisdom cannot solve original problems</li> <li>• we only want what our beneficiaries want</li> </ul>
<b>Critical success factors</b>	<ul style="list-style-type: none"> <li>• participants need to be attracted and engaged throughout the process</li> <li>• the process needs to have rigorous and time-effective leadership</li> </ul>
<b>Risks</b>	<ul style="list-style-type: none"> <li>• an open process may fail to include all stakeholder groups in a fair way</li> </ul>
<b>Promises</b>	<ul style="list-style-type: none"> <li>• innovations are truly innovative and unbiased</li> </ul>

Source: Consultant, original work for the study on Fostering Innovation in the Public Sectors of the Arab Region.

<sup>72</sup> Participatory Budgeting Project, 2017.

<sup>73</sup> URL: <https://www.google.com/maps/d/viewer?mid=1SwwvfcuO7TNbXVnWZ1KGefAMc3Q&ll=36.7334622225168%2C-88.08391586357413&z=3>.

<sup>74</sup> Webpages [https://participedia.net/en/browse/cases?f\[0\]=field\\_issue\\_area\\_other%3A1544](https://participedia.net/en/browse/cases?f[0]=field_issue_area_other%3A1544) and [https://participedia.net/en/browse/cases?f\[0\]=field\\_issue\\_area\\_other%3A313](https://participedia.net/en/browse/cases?f[0]=field_issue_area_other%3A313).

<sup>75</sup> Cf. Silets, A. (2017). *The Pitfalls of Participatory Budgeting*. Chicago Tonight, April 24, 2017, online at <http://chicagotonight.wttw.com/2017/04/24/pitfalls-participatory-budgeting> for a typical example.

<sup>76</sup> Cf. Chohan, U.W. (2016). *The 'citizen budgets' of Africa make governments more transparent*. The Conversation, April 26, 2016, online at <https://theconversation.com/the-citizen-budgets-of-africa-make-governments-more-transparent-58275>.

<sup>77</sup> Simple working definitions of these terms may be found at the Open Budget Survey webpage of the International Budget Partnership (IBP), at <https://www.internationalbudget.org/open-budget-survey/>.

## 2. Examples

### (a) eCitizen ideas! Your Gateway to All Government Services (Country: Singapore; Website: <https://ideas.ecitizen.gov.sg/>)

Singapore represents a globally unique case of a vibrant city-state and island country that have achieved a high rank in several development indices. With a population of some 5.6 million (2016 data)<sup>78</sup>, and a surface area of approx. 720 sq.km.<sup>79</sup> Singapore has one of the highest population densities in the world (some 7,800 residents per sq.km.), ranking 3rd after Macau and Monaco and before Hong Kong. At the same time, with an age median of 40.0 years old, an annual output of some 40,000 university and polytechnic graduates, a mobile penetration rate of approx. 150 per cent<sup>80</sup> and 4.4 million internet users currently<sup>81</sup> (some 78 per cent of total residents, as compared to approx. 47 per cent for Asia and approx. 52 per cent globally<sup>82</sup>), Singapore has built up ideal conditions for development. The country is steadily one of the best performers in the UN E-Government Survey, ranking among the 10 best performers in e-government and e-participation in 2012, 2014 and 2016<sup>83</sup>.



In this context, the eCitizen portal of the Singapore government has been one of the pioneering examples for offering government services in an electronic and single-window manner, as well as for facilitating citizen participation with ideas for making the country, of which a major part is the City of Singapore itself, a better place. Indeed, with the eCitizen.gov.sg portal going online as of February 1999, the current e-service offering of the Singaporean Government entails more than 680 services from more than 120 agencies, with agencies like the Agri-Food & Veterinary Authority of Singapore; the Agency for Integrated Care; the Housing & Development Board; the Land Transport Authority; the Ministry of Defence; the Ministry of Manpower; the National Environment Agency; and the Singapore Police Force offering more than 20 different services each online, the champion being the Singaporean Ministry of Manpower offering an array of 47 online services.<sup>84</sup>

At the same time, the top-popular services offered include both services related to important life events and decisions (such as housing, retirement), services related to recurring citizen obligations (including tax and loan payments, as well as renewal of licenses and permits), down to services on everyday life facilities like renewal of season parking tickets and payment of fines<sup>85</sup>. At the time of writing (November 2017), the eCitizen.gov.sg portal is undergoing re-construction due to an overall migration effort of the Gov.sg website, but uninterrupted service level has been assured by reconfiguring the portal's home as an interim information page, and redirecting citizens to the CitizenConnect directory of government agency and service listings.

All this aggregates government service offering online, one of the best in the world, and substantiates the image of a government responsive to citizen needs, and innovating to open its services to the citizens. At the same time this e-service offering constitutes important value, thus serves as proof of the idea that there is value online, and thus fosters a culture of considering valuable to interact with government online. These shifts, in turn, create a climate extremely favourable for extending government-to-citizen interaction with one more major shift: that of government which, after having *innovated to open* its services to citizens, is now *opening to citizens to further innovate*. This is exactly the idea underlying the eCitizen Ideas! portal, which invites citizens to contribute ideas for making Singapore a better place through the work of Government as well as

<sup>78</sup> The World Bank. 2017a.

<sup>79</sup> The World Bank. 2017b.

<sup>80</sup> Singapore Department of Statistics, 2017.

<sup>81</sup> Statista, 2017.

<sup>82</sup> Miniwatts Marketing Group, 2017a.

<sup>83</sup> For more information visit <https://publicadministration.un.org/egovkb/en-us/Global-Survey>.

<sup>84</sup> Government of Singapore, 2017a.

<sup>85</sup> Ibid.

through their own entrepreneurial activity. The process is driven by challenges set by government agencies, to which people are invited to submit their best possible ideas. The best of the submitted ideas is rewarded with financial prizes ranging from hundreds<sup>86</sup> to thousands of US Dollars.<sup>87</sup> At the time of writing, the portal reported more than 900 ideas submitted by more than 6,400 contributors in response to several challenges of which more than 60 have been completed, with more than 80 prizes won. On top of that, the eCitizen Ideas! website includes a publicly visible leader board, to gamify the process of idea contribution with points and badges awarded for active participation, as well as a funding page, listing seven different government funding programs where idea contributors may wish to apply for support, not just for one-off implementation of their ideas, but also for launching entrepreneurial undertakings in the form of start-ups and public-private co-innovation partnerships.<sup>88</sup>

(b) *Porto Alegre Prefecture Participatory Budgeting*

(Country: Brazil; Website: <http://www2.portoalegre.rs.gov.br/op/>)

See description in H.2.a.

## J. SUSTAINABLE INNOVATION

### 1. Description

Sustainable innovation efforts can be considered as efforts that goes beyond deploying a specific innovation. These are efforts that establish material and immaterial conditions necessary and sufficient to create an innovation process without foreseen end, that will generate innovations, and inform, motivate, improve and re-fuel itself through already produced innovations, to advance by regenerating the resources that it consumes.

**Table 9. Rationale, critical success factors, risks and promises of sustainable innovation efforts.**

<b>Rationale</b>	<ul style="list-style-type: none"> <li>• if nature needs to remain diverse and productive to support our needs, so does innovation</li> </ul>
<b>Critical success factors</b>	<ul style="list-style-type: none"> <li>• all stakeholders need to be continually committed, to make innovation sustainable</li> <li>• the process needs to remain diverse, all ideas need to be given room to flourish</li> <li>• the process needs to remain productive, innovations need to be assessed in terms of the room for more innovations that they open</li> </ul>
<b>Risks</b>	<ul style="list-style-type: none"> <li>• thinking big, without starting small</li> <li>• sustainable innovation cannot be guaranteed via planning and investments, it can only be achieved in practice</li> </ul>
<b>Promises</b>	<ul style="list-style-type: none"> <li>• a better future lies ahead, for all of us</li> </ul>

Source: Consultant, original work for the study on Fostering Innovation in the Public Sectors of the Arab Region.

### 2. Examples

(a) *Participation Cymru*

(Country: United Kingdom, Wales; Website: <https://participation.cymru/en/>)

Wales, as a country of the United Kingdom, has an estimated population of 3.1 million residents (mid-2016 data), accounting for approximately 4.7 per cent of UK's population.<sup>89</sup> At the same time, with its approx. 20,000 km<sup>2</sup> surface area<sup>90</sup> (some 8.5 per cent of the UK surface area<sup>91</sup>), its mountainous landscape and its distinctive language and culture, Wales represents an interesting case of a country with contexts and needs.

<sup>86</sup> For instance, USD 600 for the Digital Shopfront Challenge organized by Govtech, more information available from <https://ideas.ecitizen.gov.sg/egp/process/EGOV/EideasChallenge/?challengeId=20065>.

<sup>87</sup> For instance, USD 15,000 for the Spark Challenge organized by URA and REDAS, more information available from <https://ideas.ecitizen.gov.sg/egp/process/EGOV/EideasChallenge/?challengeId=20066>.

<sup>88</sup> Government of Singapore, 2017b.

<sup>89</sup> Office of National Statistics, 2017.

<sup>90</sup> Welsh Government, 2017.

<sup>91</sup> The World Bank, 2017b.

Participation Cymru (Cymru standing for Wales in Welsh) is an effort hosted by the Wales Council for Voluntary Action (WCVA), as an instrument for working with public service organizations towards better engagement of the public for the deployment of public services. On the premise that services for the public need to be designed, developed and delivered in a way that incorporates requirements and choices expressed by the public itself, Participation Cymru is addressing all organizations that develop public services, whether these come from the public, private or third sectors, to help them with methods and know-how for better engaging citizens. In this respect, Participation Cymru currently offers a list of more than 20 tailorable training courses for public service organizations, alongside offerings for bespoke training, facilitation and practical engagement work.<sup>92</sup> On top of that, WCVA has developed a discrete advice and guidance offering especially targeted at third sector organizations, acknowledging the important role that civil society can play for helping the public (just as public services aspire to), and focused on practical advice for managing and running charities and other TSOs.<sup>93</sup>



The interest of this example stems from multiple reasons. Firstly, Wales, forming part of the United Kingdom which has traditionally been on the forefront of e-government and e-participation globally, is clearly exposed to state-of-the-art thinking in these domains. Secondly, the smaller size of the Welsh population, coupled with the country specificities mentioned above, creates opportunities for fostering voluntary public engagement through learning and support instruments such as Participation Cymru and WCVA itself. It should not go unnoticed, in this respect, that Participation Cymru operates within an organization addressed to foster voluntary action, in general. Thirdly, the audience design of Participation Cymru makes a very interesting paradigm shift, from public sector to public service organizations, the latter comprising organizations of any legal status that offer services to the public, acknowledging the fact that the public nature of the services offered is more important to consider than the public legal status of provider organizations. Fourthly, the training themes currently developed include not only inclusion –focused themes (young people, communities seldom heard) but also forward-thinking themes such as practical co-production and picture-based engagement.<sup>94</sup>

At the same time, this effort qualifies as sustainable innovation, since it meets two basic conditions for sustainability. Firstly, it acknowledges diversity along the legal status of addressed public service organizations, and has a broad spectrum of methods to help create engagement. Secondly, it pursues reproducibility, based on the ethos of “working with people and organisations and not for them”. This allows teaching individuals and organizations to find their own way of applying what they have learnt, and thus operate as multipliers by example and, ultimately, as next-generation trainers and facilitators.

#### K. CONCLUDING NOTES: AN 8X8 QUEENS MATRIX OF PUBLIC SECTOR INNOVATION EXAMPLES

The selection process of the examples in the above sections has proceeded along the following principles:

- bring forward examples considering the cases already included in existing databases and repositories of the United Nations and other international organizations (e.g. The World Bank) but also going beyond them, to enrich the sources already available for interested public sectors;
- bring forward examples of innovation efforts implemented by public sectors in the strict sense, as well as examples of innovation implemented by third party stakeholders (e.g. international organizations as well as civil society organizations) that public sectors could consider embracing by adapting it or using it as sources of inspiration in their own contexts; and
- select examples that provide an appropriate coverage along three important dimensions: (a) aims and scope of innovation; (b) types of processes for innovation; and (c) diversity across different geographies and socio-economic contexts all over the world.

<sup>92</sup> Welsh Council for Voluntary Action, 2017.

<sup>93</sup> More information available from <https://www.wcva.org.uk/advice-guidance>.

<sup>94</sup> More information available from <https://www.wcva.org.uk/training-and-events/bespoke-training/courses/engaging-through-pictures>.

The outcome of this effort is presented in Table 19 below, as an 8x8 queen’s matrix of examples for public sector innovation. This matrix is structured along two dimensions, a WHAT dimension for different aims and scope and a HOW dimension for different process types of innovation efforts. A set of 8 characteristic cases has been identified for each dimension as follows:

- cases identified for the WHAT dimension (different aims & scope of innovation efforts): innovation in local government; innovation to help communities; innovation for better governance; innovation in specific domains; innovation for gender equality; innovation in small countries; innovation under crisis; and innovation for SDGs;
- cases identified for the HOW dimension (different process types of innovation efforts): bottom-up innovation; collaborative innovation; continuous innovation; disruptive innovation; frugal innovation; incremental innovation; open innovation; and sustainable innovation.

Examples included in this matrix have been selected to have two examples available for each case of different aims and scope, two examples available for each case of different process type, the overall set of examples dispersed along different geographies, and no any two examples coinciding in terms of contents (i.e. each example referring to a different case of innovation). In this respect, all 16 examples included in this matrix are not antagonistic to each other, in the sense that a public sector could in theory consider up taking all of them, without any two of them coinciding by referring to practically similar cases. In this sense these examples are not attacking, so to say, each other, thus the wording used to refer to the matrix below as an 8x8 queens’ matrix, since its construction logic is reminiscent of solutions to the 8x8 queens’ problem in chess.

**Table 10. An 8x8 queen’s matrix of examples for public sector innovation.**

WHAT & HOW dimensions	HOW: innovation process types							
WHAT: innovation aims & scope	bottom-up innovation	collaborative innovation	continuous innovation	disruptive innovation	frugal innovation	incremental innovation	open innovation	sustainable innovation
innovation in local government			City of Boston Apps				Porto Alegre PB	
innovation to help communities					VolunteeringQLD			Participation Cymru
innovation for better governance				Diavgeia			eCitizen ideas!	
innovation in specific domains		TAXISnet	GSIS.ph					
innovation for gender equality	Solar Sister							The Hunger Project
innovation in small countries				vTaiwan		e-Estonia ID Card		
innovation under crisis		HDX			DMU Mumbai			
innovation for SDGs	Project Isizwe					Resilient Byblos		

*Source:* Consultant, original work for the study on Fostering Innovation in the Public Sectors of the Arab Region.

*Note:* The examples included in this matrix are documented in the previous sections with basic information, including innovation aims & scope, innovation process type, full name, country, online presence URL and website snapshot.