

Systems — Waste Services That Are Integral for the Citizens

Miguel Ángel Nadal Novelo, and José de Jesús Vázquez Chabolla

Office of Environmental Protection, State of Quintana Roo, Mexico

Abstract: To provide a public service for the collection, transportation and final destination of garbage, is an important component of public expenditure for municipal governments. In turn, citizen demands for a service that meets their real needs is closely linked to the demand to improve public services and a thorough review of the relationship between the municipality and its citizens. Although the provision of services has a long historical tradition, many of the functions associated with the consolidation of the so-called “welfare state” and “regulatory state” in the last century has demanded new services and more regulations and have increased the need for interactions between the municipality, its citizens and service providers.

A comprehensive public waste service requires transactions between the citizens and the municipality that involve the exchange of information and the complete of predefined procedures for access to information, the exercise of rights, or compliance with obligations. Achieving this proper balance between disruptive innovations and strengthening institutionalization is a central challenge for the municipalities of the America’s. In this study, a conceptual framework and analytical tools are presented that will be useful for those responsible for public policy and the provision of the public service collection, transport and final disposal of solid municipal waste, where there is interest by the municipal administration, companies and citizens in facing the challenge to get to obtain an efficient service in the integral management.

Key words: waste, collect, recycling, transformation

1. Introduction

There is a very common stereotype of the public servant as unmotivated and resistant to change, one who provides the traditional service of municipal waste collection, very distant from the expectations of the citizen, classifying the process as tedious and onerous; an image extensively disseminated in our societies. Reaching farther than this popular perception, recognized authors have reinforced such an image, signaling that difficulty in innovation is something inherent to the public sector [1-3].

Even though the complexity of the environment has historically hampered innovation, a historical retrospective allows us to question this image. In the

scientific field, some of the main innovations of the last decades have been generated in the field of the public sector. Although they end up being exploited by private enterprises as it is the case of the mapping of the human genome that it was developed for the government of the United States. (National Institute of Health (Human genome); Defense Advance Research Projects Agency (DARPA)).

The solid urban residues are those that are produced in homes as consequence of the elimination of materials used in the domestic activities (for example: waste from consumer products and their containers, wrapping or packaging, or organic waste); those that come from any another activity that takes place in establishments or in the public roads, that have domiciliary characteristics and make these public places not be considered as some sort of waste [4].

Corresponding author: José de Jesús Vázquez Chabolla, Ph.D.; research area/interest: environment. E-mail: jesus_vazquezch@hotmail.com.

2. Objective

The application of methodology in innovation, by means of the reinvention of the integral public service of solid waste disposal for its modernization, during times of fiscal austerity and budgetary restriction through the application of the value for money.

3. Methodology

The environments are increasingly more dynamic forcing individuals to adapt constantly both in the public and in the private sectors. In this context, innovation cannot be seen just as means to an end, but as an opportunity to do the same things we already do in a different manner or to try different things in the search for efficiency and effectiveness towards the current goals set forth by institutions. In this search, the answer from the private sector has been in contexts where incentives reasonably convergent with the need to assume inherent risks to the business, and with the goal to generate income greater than the costs of operation, to survive in the market in competitive form and to provide earnings or utilities to the shareholders. Therefore, Schumpeter (1942) [5] defines innovation as the “process of creative destruction”. On the other hand, Pollit (2011) [6], the lack of precision with which it was defined, applied and measured the innovation in the public sector, positions it in the category of “vital but vague”. Without a doubt, the complexity and the tensions generated by incentives that are not aligned and are opposed make the processes of adaptation towards necessary change even more prickly.

The use of methodologies based on experimentation and participation, as it is them “design thinking” and “human-centric design”, through teams of innovation, that are promoting political and programs to the real needs of the public, by means of the design, the development and the evaluation of solutions.

Facing the demands of more informed and demanding citizens is not an easy task. Unfortunately, the surveys show that the governments of Latin America are not attaining answers to the expectations

of their citizens according to the Latinbarometer. (Latinbarometer, instrument of measurement of public opinion applying in 18 countries of Latin America, whose aim is to investigate the development of the democracy, the economy and the society in his group, using indicators that measure attitudes, values and behavior of public opinion¹).

The success of a lot of public politics and regulations depends on the attitude of the citizens, and the economic environment is directly affected by the confidence that investors and consumers have in the government. (In accordance with estimates of the BID in base to the Government at a Glance, OCDE (2013) [7] and the, exists a marked positive correlation ($R^2 = 0.4265$) between the confidence in the national governments (2012) and the gross internal product (GDP) per capita (2012) of the members of the OCDE.)

The methodology includes the goal to organize an inventory of that have been reported as innovative towards the systems of waste management with the objective to select cases to study and create a reference matrix that synthesizes the innovative process of services centered on the citizens. An analysis effort has settled down in the Program of Government of the School Kennedy of Harvard (The Program of Government in the School Kennedy of Harvard has supposed the review of thousands of programs to determine the characteristics of the innovation).

The initiatives selected must meet the the requirement to have obtained excellent remarks due to their innovation in the management and provision of waste collection services on the internet, and we can mention the one of Electronic Government of the Network of Electronic Government of Latin America and the Caribbean (Network GEALC) [8], skilled congresses in subject of waste and the Prizes Govern you of the BID, amongst other. In total, 130 cases from around the world will be selected for analysis, with representation from all levels of government. These cases documented between the years of 2011 to 2016,

¹ <http://www.latinobarometro.org/lat.jsp>.

taking into account that they meet the current conditions to be able to be applicable to the year of 2017, and that when obtaining mentions recognized institutions give us the certainty that they are works representative of an innovative provision of services in the subject of solid waste.

The following step was selected out of eight studies of cases by a group of people that work in diverse areas and that have a wide knowledge in matter of innovation and services in solid waste management in the public sector. This committee of selection will be integrated into the environmental sciences, industrial, environmental right, businesses, marketing, sociology, social and political psychology publish. Basing the review in determining the quality but notable in each project on degree of novelty, efficiency, importance and ease of transfer. Each case was valued in a scale of the 1 to the 5 of the following way: Those who selected the points Novelty: The project tackles the problem of good and innovative way? Not very good/not very innovative (1) — Very good/very innovative (5); Efficiency: What so notable is the impact of this project? It is not notable (1) — Highly notable (5); Sustainability: Which possibilities there is that this project was sustainable on a long-term basis? Highly unlikely (1) — Highly likely (5); Ease of transfer: Which is the potential of this project to transfer or adapt to (others) countries of the region? Under potential (1) — High Potential (5). The analysis of each cases was later carried by experts in the subject of waste of the municipality of Conkal, Yucatán, Mexico, for having the experience and knowledges on the transformation of the solid waste in useful products in the construction of social and rural houses developed in the state of Yucatán, Mexico, with base in the matrix defines in terms of significant improvements in the form in that the public sector works and/or in the way in that it loans products/services and realizing glimpsed with key actors of the neighboring opulations of Kanas n, Conkal, Chicxulub Village, of the state of Yucatán, Mexico, like this will obtain the main

heterogeneity in the perception of the different types of individuals that conform the citizenship that receive the service that involves the solid waste and improve the index of general satisfaction citizen, This group work generates the tropicalization of the frame of reference of the able method to orient and systematize the analysis and give the diagnostic of those environments where carries out the delivery of the service of solid waste collection, presenting the proposed product of the design and the form of implementation of processes of innovation for the improvement of the system and can provide a complete service, integral that resolve to the citizen his individual need specifies in question of his waste been used to generated, ranged the federal norms, state and municipal, avoiding follow causing damages to the health, to the environment or to the picturesque image of the municipality of Conkal, Yucatán, Mexico.

In Mexico, the General Law for the Prevention and Integral Management of the Waste (LGPGIR, by its acronym in Spanish) forces the generators and agents of RP to handle them in a safe and environmentally suitable way (LGPGIR, First Title, Unique Chapter, DOF, 2003) [9]. The agency charged with the verification of the fulfillment of said law is the Federal Agency of Environmental Protection (PROFEPA), this by means of inspection and surveillance programs.

The recollection service is a public offering that comprises the collection of the RSU in the place where produce (usually the houses, the industries, the trades or the public buildings) and his transfer until the place where treat or have. From the environmental point of view and of public health, has a fundamental importance, in addition to that the waste that is collected (at least a part of them) can be recovered or had properly. In contrast, those that do not collect can remain in the places of generation or dissemination, causing negative effects, such as: the obstruction of drains and waterways (with potential risks of floods), contamination of the bodies of water and the soil, deterioration of the landscape that can turn into a

source of potential illnesses to the population, amongst other [10].

The final disposal of the waste has to do with its tank or permanent confinement in places and installations that allow us to avoid its dissemination and possible effect to the ecosystems and health of the population. The Mexican Official Norm NOM-083-SEMARNAT-2003 defines the specifications of environmental protection for the selection of the place, design, construction, operation, monitoring, closure and complementary works of a place of final disposal of urban solid waste

4. Results and Discussion

The analysis of the cases selected supports identification of the three vectors indicative of the change to be considered in the reform of the public services of collection of transactional rubbish: integration, simplification and generation. Of equal form, the analyses have allowed to perceive and understand the dynamics and the necessary balance between the promotion of the innovation, like key element of the change. Getting to detail the subjects involved in the development of the proposal, these points include: Private Investment, clearly define the roles of the integral service by means of the investment of capital deprived by part of the regulation of service and its operations by part of the municipal government; create a home registry of the daily generation of waste by part of the citizens, establishment of the tariff system in relation of the daily generation taking in account the economic and social situation of the generator by means of a subsidy to all family heads that do not appear to and can show not having a daily minimum wage, neither a main generation to a kilo by his house; of the investigation on the technologies of tip that recycle all the waste without generating broadcasts to the atmosphere, to the water, or production of leached and that have a commercial product of high circulation with upper social demand to the daily generation of waste of the population and that integrate an economic

chain that produce dividends that interest to real investors in the industrial area of risks; of this way when obtaining commercial final products, has to develop the design to measure; including the technologies of the information for the communication with the population. The creation of systems of attention to the public and the organization of the systems of processing of formalities of *back-*end (by his acronyms in English), of the government are decisive steps to the achievement of this aim. They establish like result of the present work when using tools known by the successes given in the application of methodologies for the administration by results of the governments subnational of the BID: Regulatory guillotines with the weight of administrative loads; technologies of the information and centers of services; Regulation based in risks; Accessibility of the information of the regulation; automatic Reviews (sunset clauses, OCDE); Rule “one-in one-out”; administrative Silence is consent (positive ficta); Evaluation of normative impact. The evaluation of normative impact (RIA, by his acronyms in English); Planning; Public Inquiry; Design of the strategy of simplification; Execution and feedback. Like result of the mentioned results in the creation of the project designated “The Microentrepreneur with attention customized to your needs of service”, a person trained in the service of the domiciliary, house by house collection of waste, swept of sidewalks and sidewalks in the hour that require, the one who besides can give services of repair, maintenance, reception and delivery of parcel, medicines, municipal payments and presented services of surveillance by means of collections by an agreement of services commissioned by the municipality of Conkal of a determinate territory and created in base to the system of micro-collection and macro-collection designed by and for the municipality of Conkal in the year of 2006, delivering each eighteen hours the quantity of waste collected and over time sufficient to separate the recyclable products of his suitability, for his transfer to the center of

transformation of waste in materials designated Vomer's of the Key Project of Register 129364: "Development and implementation of clean technology and demonstration of the harmlessness of the products generated through the set up of a pilot plant and experimental prototype for the treatment and transformation of the urban solid waste", of the Announcement 2009-07 of the Mixed Bottom of Promotion to the Scientific and Technological Investigation CONACYT — Government of the state of Yucatán, having the Certification of the Technological Institute of Mexico since the results of laboratories certified indicate that it has to weigh of the transformation that has suffered the rubbish the process used in the plant of treatment is able to confer him innocuousness to the final product generated and allows was viable in commercial uses. The products have been used in the construction of social and rural house, what closes the circulate of the commercial chain. By means of systems of communication keeps informed to the citizen the one who and hour in that they will collect his waste, the quantities delivered with the economic amount of the service, and the guarantee of the transformation without causing damages, by the contrary his contribution by his cooperation to diminish the needs of house of the social classes but hurt of the municipality. As well as, the detail detailed of the other services hired.

In summary: as it already mentioned the scientist and winner of two Nobel prizes Linus Pauling said that "the best way to have good ideas is to have a lot of ideas and dismissal of the bad". In the present work shows that the direct relation between the municipality and his citizen constitutes a wide, complex and increasing area of knowledge that covers diverse scientific fields and relate strongly to the results of the governmental programs and the confidence of the citizens in his government. In almost all the cities, the public services are the main component of the public expense and its effects condition the quality of life of the population,

and the productivity and the competitiveness of the companies. Therefore, the utilization of this type of tools is key to achieve the acceptance of the services proposed to the citizenry to obtain its satisfaction and will achieve the expansion of the academic and empirical knowledge applicable to the design and implementation of politics within the municipality with social acceptance.

References

- [1] J. A. Schumpeter, *Capitalism, Socialism and Democracy* (3rd ed.), Nueva York: Harper & Row, 1950, p. 431.
- [2] H. R. van Gunsteren, *The Quest for Control: A Critique of the Rational-Central-Rule Approach in Public Affairs*, Londres & Nueva York: Wiley, 1976.
- [3] J. C. Scott, *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed*, New Haven & Londres: Yale University Press, 1998.
- [4] Ley General para la Prevención y Gestión Integral de los Residuos, Section XXXIII of Article 5, Diario Oficial de la Federación, México, April 28, 2003, available online at: http://www.diputados.gob.mx/LeyesBiblio/ref/lpggir/LGPGIR_orig_08oct03.pdf.
- [5] J. A. Schumpeter, *Capitalism, Socialism and Democracy*, New York.
- [6] Harper, 1975 (1942). "FTE creative response in economic history", *Journal of Economic History* 7 (1947) 149-159.
- [7] Pollitt C. and Bouckaert G., *Public Management Reform: A Comparative Analysis*, Oxford, UK: Oxford University Press, 2011.
- [8] Government at a Glance 2013, OECD, doi: 10.1787/gov_glance-2013-en.
- [9] National Accounts at a Glance, 2014 of the OCDE, doi: <http://dx.doi.org/10.1787/naag-data-en>
- [10] Electronic Government Network of Latin America and the Caribbean, available online at: <http://www2.redgealc.org/>.
- [11] Ley General para la Prevención y Gestión Integral de los Residuos, First Title, Unique Chapter, Diario Oficial de la Federación, October 8, 2003, available online at: http://www.diputados.gob.mx/LeyesBiblio/ref/lpggir/LGPGIR_orig_08oct03.pdf.
- [12] ACNUDH (Office of the United Nations High Commissioner for Human Rights), A-Habitat, p. 3, available online at: https://www.ohchr.org/Documents/Publications/FS21_rev_1_Housing_sp.pdf.