



## PROJECT:

# IMPACTS OF DIGITAL TRANSFORMATION

## A model for analyzing the impacts of digital transformation: saving time, money, and carbon emissions

Keywords: Digital transformation, sustainability, carbon emissions, time savings, cost savings, travel reduction.

### ABSTRACT

The City of Milan's Digital Transformation Plan, launched in 2016, has been focused primarily on streamlining government processes and simplifying citizens' lives - paving the way for the development of fully digital services.

To assess the impacts of digital transformation, the City has developed a model based on three main measures of sustainability to citizens and the municipality: economic (money saved), environmental (carbon emission saved) and for the first time, social (time saved). The City's innovative model will be freely released as a blueprint for other cities who are interested in developing a sustainable digital transformation.

It's generally understood that these models are somewhat subjective and can be applied in various ways. In order to make accurate, real-world assessments, the model was applied to several current City processes. The first was the City's Registry Office, which manages and issues vital records and citizen certificates – one of the most demanded services of the City. The Municipality was able to quantify the economic, environmental, and social savings of making these services available online, specifically lessening the need to travel to Municipal offices across the city.

The model assesses benefits to citizens as well as to the Municipality itself. To individual citizens, the ability to access citizen certificates digitally saved them each 1 hour of their own time in travel, to the administration it saved €1.2 million euro, and collectively saved the City 49 tons of CO<sub>2</sub> in 2019 (equivalent to planting 3,266 trees). Digital services are not only improving quality of life for users but are also contributing to bettering health and wellness across the city.

### CONTEXT

This Digital Sustainability model was created in order to provide to the Municipality and various City Departments key performance indicators (KPIs), based on the digital initiatives adopted and implemented each year. The model is derived by computing the benefits achieved from the implementation of the Administration's digital agenda and compares the effort of delivering the same service online versus in person, at a municipal office. In order to assess the validity of this process, as well as the data and metrics used, the Municipality requested and obtained certification from a third-party company specialized in validating these kinds of projects.

For several years, the Municipality has started transitioning to an ever-increasing delivery of digital services, with the aim of:

- **Improving the number of services delivered to citizens;**
- **Enhancing the efficiency of the Public Administration;**
- **Guaranteeing the sustainability of upcoming municipal projects**

While there are three main measures of this model on economic, environmental, and social savings, the full quantification of the benefits of digitalization spans six indicators. Three of these are focused on the Public Administration: time savings, savings due to a more efficient allocation of human resources and reduction of paper consumption. The other three indicators are focused on citizens: time savings, costs savings and the reduction in CO<sub>2</sub> emissions.

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The model was built to be adaptable to the wide variety of services provided by the Municipality, and to monitor the impact of digitalization on each of these services. In addition to assessing the impacts of making citizen certificates available online from the General Registry office, the City of Milan has already applied this model to two other areas of the Municipality: excavation procedures and the platform developed for document management (AURIGA).

## STAKEHOLDERS

The project was designed by the Information Systems and Digital Agenda Department of the Municipality of Milan and implemented with the support of an external IT company.

## IMPLEMENTATION

As described, the first in-depth project was focused on the citizen certificates provided by the General Registry Office. The outcomes validated the city's assumptions on cost savings and helped build the evidence used to assess the related carbon emission reduction.

## LEARNINGS

The model allows the City to evaluate the potential benefit of the digitization of a service prior to its development, and to measure the results after such service is made available online. Through this calculation, the City is able to monitor and assess the efficacy of each digital transformation project.

## FUTURE

The City wants to expand this model across all the Departments of the Municipality, for a global evaluation of the City's full digital transformation plan. To this end, the model will be used to assess the expected impact of every project before and after its development. The Municipality will also actively promote the results to make citizens aware that each time they choose a digital service they have a positive impact on the three aspects of sustainability: economic, environmental, and social – saving time, money, and carbon emissions.

Future considerations include expanding carbon emission savings by actively planting trees to offset all the transportation still required for services that cannot be provided digitally, largely due to national legislation on digital services.

## DATA AND NUMBERS

### Impact of the digitalization of the General Registry Office citizen certificates (2019):



Approx 8 minutes saved for the creation of a single digital certificate (total of 45.500 hours per year).



€1,2 million saved each year to be used for other City services.



450k sheets of paper saved every year.



1 hour and €4.40 saved in commuting costs for each service requested online, rather than at a municipal office.



49 tons of CO2 saved each year by citizens (equivalent to 3.266 trees).

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Photographs by Andrea Cherchi

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