



**DEVELOPING DATA
SCIENCE SKILLS
IN PUBLIC SECTOR
MANAGERS**





DEVELOPING DATA SCIENCE SKILLS IN PUBLIC SECTOR MANAGERS

2019
METROPOLITAN REGION AND VALPARAISO

PUBLISHED CASE IN THE PUBLIC INNOVATORS NETWORK

The project sought to help public managers recognize what public policy issues can be solved using Data Science. GobLab UAI and the Center for Data Science and Public Policy at the University of Chicago developed an open curriculum that delivers practical tools for formulating data analysis projects that contribute to the State's digital transformation strategy. The course was piloted with 72 public managers, and 66 projects were formulated.



<https://goblab.uai.cl/proyecto-curso-ciencia-de-datos-para-directivos-publicos/>



INTRODUCTION

The objective of this project was to design and implement a training course on the formulation of Data Science projects for the public sector, as it is known that there is a need for this type of training. This type of course did not exist previously in Chile or the USA. GobLab UAI developed it jointly with the Center for Data Science and Public Policy at the University of Chicago, which has developed Data Science projects with more than 100 public and non-profit organizations in the past 6 years.

The course was held free of charge in Santiago and Viña del Mar for public managers selected from GobLab's Public Innovators Network, who applied with their ideas for Data Science projects that address issues at their public agencies. 134 applications were received. This activity also served to stimulate the Public Innovators Network and generate training opportunities that make participating in it appealing.

OBJECTIVES

This project is the first of its class in Chile and sought to help public managers identify what public policy issues can be solved using data.

Until now, the existing training programs were focused on teaching theoretical or practical data analysis skills. However, those who are designing or implementing public policies need to be capable of identifying in which part of this process a Data Science project would add value and how to formulate it as a project (understanding the problem, setting objectives, identifying actions, diagnosing data maturity, etc.).

The idea is to identify the specific opportunities presented by Data Science in order to contribute to the execution of the institution's strategic plan and be able to formulate them so these projects can be taken to further instances of feasibility analysis, budget formulation and/or execution.

Thus, the general objective of the project was to "Design and execute a training course on how to formulate Data Science projects for the public sector".

The impact of the initiative is the generation of capabilities and knowledge about the formulation of Data Science projects in the public sector for the fulfilment of institutional strategies, proving that Data Science is a tool for public innovation in a wide variety of sectors within the public sphere.



The project was carried out thanks to the support of GobLab and the Civil Service, which allowed developing the curriculum with the guidance of the University of Chicago, training UAI faculty at the University of Chicago and offering the course to public managers in Santiago and Viña del Mar free of charge.

SPECIFIC OBJECTIVES

- To develop an unprecedented curriculum aimed at public managers to promote the use of Data Science.
- To test the curriculum on public officials.
- To promote an interest in the use of Data Science as a public innovation tool.
- To generate an open curriculum meant to be replicated by other institutions.

USED METHODOLOGIES

The course was developed in workshop format, with a mixture of talks, individual and group work. The work was carried out in practical exercises that allowed refining the project idea submitted before the course in a Data Science project. The students were able to fine-tune their projects with the support of their teachers and assistants, in addition to participating in teamwork with their peers from other public institutions, which allowed them to exchange experiences and generate connections. Two individual tasks were delivered during the course, before the second and third day, which received feedback from the teachers and assistants.



The development of the course had an innovation approach through the application of rapid feedback surveys, which allowed improving the design of the classes according to the needs expressed by the students as the course progressed. The teaching material was improved after its implementation, incorporating changes for the public version in order to facilitate its comprehension.

As a result of this experience, we created a curriculum with an open license so that it can be replicated by other institutions. The course teaches the methodology for formulating Data Science projects (data science project scoping) developed by the Center for Data Science and Public Policy at the University of Chicago. The development of the course considered an improvement to the material used by the University of Chicago to apply it and its translation into Spanish.

After the 3 sessions of each course, 69 public managers were certified, and 66 Data Science projects were developed. 50 public services were represented among the students.

At the end of the course, GobLab selected one project per campus to provide free support for its formulation (Carabineros de Chile and Sernapesca) through its professionals and students from the Big Data for Public Policy Diploma at UAI.

The curriculum is already published with the improvements on its webpage, and it includes the class videos, references and worksheets.

RESULTS

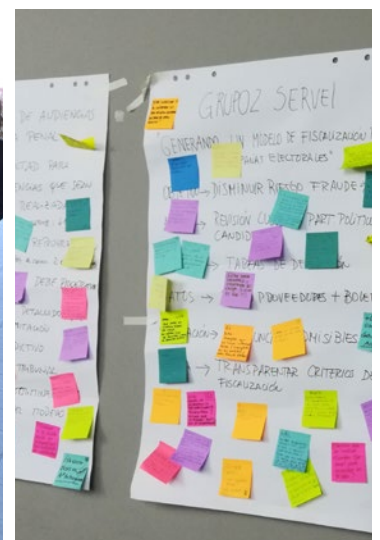
Thanks to this initiative, 4 projects are currently being executed as degree projects from different UAI Master's (Servel and Department of Foreign Affairs and Migration, 2019; Sernapesca and Education Superintendence, 2020).

The students evaluated the course with an average grade of 6.4 (out of 7). 98.5% of the students indicated that they intended to implement their project. 87% expressed that they made a useful connection for them or their work.

Then, in a survey conducted 6 months later, 87.5% indicated that they understand whether a given public issue is approachable through Data Science.

In addition, a reduced version of the course was imparted to public officials in Australia in March 2020, and the curriculum is now an open course that will be permanently imparted by UAI. The curriculum was also adapted to remote on-site format due to the COVID-19 contingency and was imparted during the first semester of 2020.

El currículum se adaptó también a formato presencial remoto, por la contingencia del COVID19, y se dictó durante el primer semestre del año 2020.





WHAT MAKES YOUR INITIATIVE A PUBLIC INNOVATION?

This type of course is the first in Chile and the world. It was aimed at public managers to generate knowledge and capabilities in the use of Data Science for formulating projects and fulfilling their institutional strategies. It is currently available to all public officials. Data Science is an innovation tool for managing and designing public policies that is slowly becoming more relevant in the world. Therefore, it is of great importance that people in the public sector get training on this topic.

This proposal had the open course's curriculum as a final delivery milestone, which helps bridge the knowledge gap that currently exists within the public sector about Data Science and its uses. It is available in Spanish and English to widen the impact spectrum. This way, people can visit the course's webpage to review the contents, download the worksheets and formulate their projects.

LESSONS AND CHALLENGES

The first challenge was the participation in the region of Valparaiso, which had less applicants. It was necessary to extend the term and do targeted dissemination. It would have been beneficial to launch the application process with an event in Valparaiso for the target audience.

Another challenge was the fact that many participants did not know what Data Science was. Projects of a different sort applied, for example, digitalization of procedures. The course's iterative

approach allowed the participants to modify their project for task 1. It would be useful to include project examples in order to focus the call for entries.

Short surveys were conducted in order to iterate on the course as it was developed. In the first, students indicated their desire to have examples of successful experiences in Chile. This generated a challenge for the teaching team, as the experiences are recent and not necessarily documented. In any case, Chilean cases were included to bring the use of Data Science closer to the country context.

WHO CARRIED OUT THE INITIATIVE?

The project was carried out by GobLab of the School of Government at UAI. The curriculum was designed with the Center for Data Science and Public Policy at the University of Chicago.

COLLABORATIONS

This initiative was supported by GobLab's Public Innovation Fund and also by the Civil Service.





ADDITIONAL INFORMATION AND CONTACT

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ADDITIONAL RESOURCES

Link to course videos: <https://www.youtube.com/watch?v=dzwVnPQsyWc&list=PLLiNBY434b1u472jIjizylasVFYm4oKeN>

Curriculum, references and project scoping worksheet published on the project's website:
<https://goblab.uai.cl/proyecto-curso-ciencia-de-datos-para-directivos-publicos/>





Gob_Lab UAI
UNIVERSIDAD ADOLFO IBÁÑEZ

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