Data projects at the PES

BUILDING BLOCKS TARGETED AT THE USE OF BIG DATA AND ARTIFICIAL INTELLIGENCE (AI) IN ORDER TO IMPROVE, MODERNISE, AND ENHANCE THE EFFICIENCY OF JOB SEARCHES, COUNSELLING, AND RECRUITMENT. THE CORE PILLARS ARE (1) BIG DATA, (2) STATISTICS, (3) DATA SCIENCE, (4) AI, AND (5) ETHICS.

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AI can be of great value when it comes to finding jobs, fighting against fraud and scams, matching and filling vacancies, nonetheless some perfectly eligible candidates might be sorted out by algorithms which are not adequate.

Name of the PES	Pôle emploi
Scope of measure (a pilot project or a national reform)	Several projects at the national level including data mining, data science, AI and open innovation.
When was the practice implemented?	Pôle emploi started its activities for systematically collecting, analysing and exploiting data in 2009. Since then, activities in the field have been intensified continuously and will remain an important driver for change and innovation at Pôle emploi.
What was the driver for introducing the practice? Was it internal or external?	In 2009, Pôle emploi entrusted researchers from the Paris School of Economics with the task of carrying out an experiment on the anonymous CV. The objective set for the experiment was to shed light on the feasibility and effectiveness of using an anonymous CV in the fight against discriminations. The protocol follows a principle of random assignment making it possible to compare offers with anonymous CVs (tested offers) with statistically identical offers, but using the nominative CV (control offers). This project prepared the path toward statistical research at Pôle emploi that ended up in the AI field. A Data Lake was necessary to be able to proceed with more and more sophisticated analysis.
Which organisation was involved in its implementation?	▸ Agence Data Services: an agency inside Pôle emploi's IT department ▸ Paris School of Economics (PSE) ▸ Abdul Latif Jameel Poverty Action Lab Europe at the PSE ▸ Copenhague Business School (since 2021) ▸ La direction interministérielle du numérique (DINUM)
Which groups were targeted by the practice?	PES staff and Pôle emploi's customers, jobseekers and recruiters.
What were the practice's main objectives?	▸ Forecasting future labour market trends including future jobs and the impact of innovation ▸ Improving the job searching algorithm (more targeted searching options) ▸ Improving the efficiency of job consultants at the PES ▸ Strengthening the support of jobseekers and employers and increasing its efficiency ▸ Fighting frauds and scams
What activities were carried out?	▸ Data pooling in two data centres at the PES ▸ Combatting fraud with respect to job searches ▸ Introducing a selective mail system for job consultants at the PES for timesaving purposes ▸ Project LEGO: digital system scanning job offers for the purpose of finding legal inconsistencies ▸ Text mining ▸ Attitude survey in enterprises concerning unsolicited applications.

What resources and other relevant organisational aspects were involved?	▸ External researchers at PES working on algorithms, simulations, and modelling of the labour market ▸ Constant dialogue with partner organisations ▸ 60 Application Programming Interfaces (API).
What were the source(s) of funding?	Budget of Pôle emploi.
What were the outputs of the practice: people reached and products?	The practice of AI in Pôle emploi is deployed in two ways: 1) A "laboratory-type" modality with numerous exploration projects in different fields. 2)An "industrialisation-type" modality with the following four areas: a) La Bonne Boîte and the PSE experiment together aimed at increasing the efficiency of spontaneous applications; b) AI-based scanning of incoming emails: for the benefit of counsellors, an AI scans incoming emails and analyses their content to allow advisors to respond better and faster; c) AI-based fight against fraud and scams: to support recruiters, an AI controls the activity of recruiting spaces in order to fight fraud and scams; d) AI-based analysis of job offers: for the benefit of jobseekers, an AI checks each of the job offers posted on Pôle emploi's vacancies platform in order to ensure that they comply with French law. Other outputs will be delivered in the future: an AI will scan the queries made by jobseekers on the search engine for job vacancies. These include semantic analysis to better understand the queries, enrich the ontology and better know the candidates (individually or in cluster) to personalise the list of job vacancies
What outcomes have been identified?	Tedious jobs have been automated to a large extent, so that counsellors can deliver more individualised, targeted and intense support and counselling to the jobseekers (and recruiters) who need it most.
What are the lessons learnt and success factors?	Pôle emploi will continue to invest in innovative solutions for improving services and increasing efficiency. Still, the acceptance of AI is a crucial issue, both for our users (jobseekers and employers) and Pôle emploi's employees. In order to overcome reservations, an Ethics Committee was created on February 16, 2021, made up of different experts including university professors, technical, ethical and legal experts, and representatives of Pôle emploi's customers.

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