PORTUGAL'S ENHANCING OCCUPATIONAL SAFETY AND HEALTH COMPLIANCE WITH NEW TECHNOLOGICAL TOOLS (CASE PT3)

1. Introduction

Promoting effective occupational safety and health (OSH) practices is key to safer and healthier workplaces. Improving arrangements and practices for managing OSH across a whole range of industry sectors and firm sizes — large, medium and small — is stimulated, supported and sustained by a range of institutional actors and internal and external processes to firms. Scientific research highlights, among other things, the critical role that state regulators for OSH, such as Labour Inspectorates and prevention services, can play (EU-OSHA, 2021). This case study is part of a research project conducted in Portugal to provide further insight into this topic.

To strengthen the work of Labour Inspectorates, there has been an attempt to modernise and adapt labour inspectors' resources by developing new tools (e.g. new technological systems and digital tools) (ILO, 2022). Yet, little has been explored of these practices in literature, and their capabilities and efficiency remain largely unknown — particularly in the Portuguese context.

In Portugal, the most recent technologies used to support the inspection activity are digital simulators, a chatbot and a mobile app developed by the country's Authority for Working Conditions (ACT). In addition, ACT uses digital tools to share public information (e.g. activities developed, labour legislation and other publications) and to collect workers' complaints and requests (Eurofound, 2023). The digital simulators appear to have been effective in granting workers and companies access to specific information, having also been subject to adjustments and corrections since their implementation (e.g. changes in the Labour Code, technical issues). In addition, ACT recently launched a new website intended to simplify access to these various services and the request forms.

Hence, the focus of this case study is to explore the functioning and efficiency of the digital simulators and chatbot developed by ACT, which are described as innovative and as a good practice in the country, taking into account their heuristic character and limitations.

2. Description of the case

Aims

Provide quick and easy access to information on the rights and duties of employers and workers, to enhance compliance with OSH regulations.

Target group

These technological tools are accessible to anyone who accesses ACT's website or uses its app, although their development has been primarily focused on workers and employers.

What was done, and how?

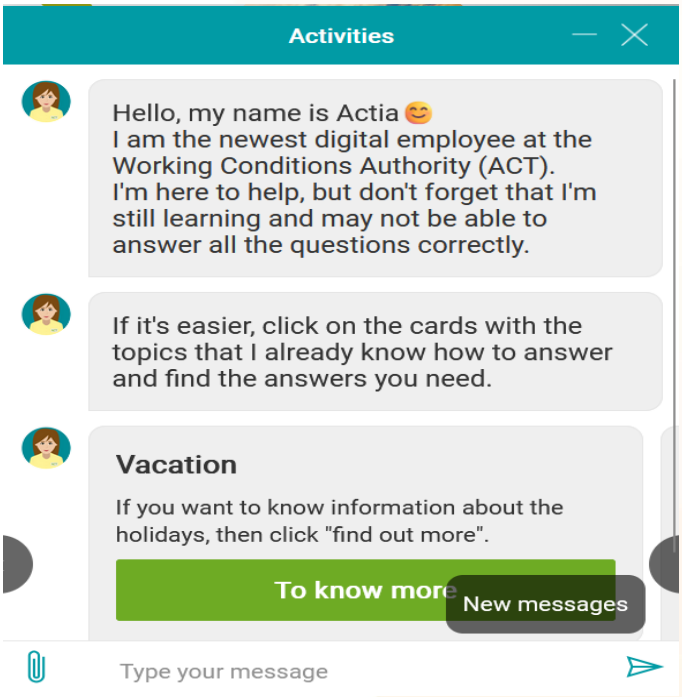
ACT provides digital simulators and a chatbot as online tools for workers and employers to access specific information on employment and labour rights.

In the simulators, users can include additional data relating to a concrete situation, which allows the results to be more accurate based on the input provided. These tools allow users to quickly and easily access information on labour relations and working conditions, such as holiday entitlements, parental or sick leave, and other issues.

ACT's Chatbot: ACTia

The ACTia Chatbot was created to provide practical and accessible information on working conditions. It is an interactive channel meant to be used autonomously. The tool can be accessed through ACT's website, from the home page and through the app. The questions menu can be accessed with a single click, and several options come up straight away, as shown in Figure 1.

Figure 1: Illustration of the pop-up message that appears when accessing the ACTia Chatbot.



Source: https://portal.act.gov.pt

ACTia provides information on working conditions, workers' rights, professional education, professional certification, and occupational health and safety matters. Specific questions can be asked for each subject, and they are quickly answered. Documents (i.e. in PDF or Docx format) can also be attached, and questions can be answered via the chatbot.

Digital Simulators

Eight simulators are available. They have been listed, along with their respective functionalities, in Figure 2.

Figure 2: Description of the different ACT digital simulators currently available and the specific services provided. Information retrieved from ACT's homepage

Simulator	Service provided by the simulator
Compensation simulator for termination of employment contract	This simulator helps to calculate the amounts provided for by law for situations involving termination of an employment contract, including compensation (when applicable) and amounts relating to holidays, holiday bonuses and Christmas bonuses.
Compensation simulator for training credits due upon termination of employment	This tool allows employees to calculate the statutory values related to their right to training upon the termination of employment contracts. It converts unprovided training hours into credit hours, ensuring the corresponding remuneration. Users can easily determine the compensation they are entitled to for the training hours not delivered by their employer.

Simulator	Service provided by the simulator
Simulator for communicating the termination of a fixed-term contract – on expiry	This simulator will help users determine the appropriate date to issue a notice of termination for a fixed-term employment contract in cases where it will not be renewed.
Employee termination notice simulator – by termination of contract	This simulator helps to estimate the date on which notice of termination of employment must be given if the employee wishes to terminate the contract.
Simulator for absences due to the death of a family member	This simulator will help to know how many days an employee is entitled to with justifiable absence in the event of the death of a family member and when they should return to work.
Holiday simulator	This simulator will help determine how many days of holiday an employee is entitled to during the year they join and the following year.
Simulator to determine the probability of the existence of asbestos	This simulator helps in establishing, in an approximate way, the likelihood of asbestos in buildings, installations or equipment, as well as whether any interventions are necessary.
Simulator of the organisation modality of occupational health and safety services (OSH)	This simulator helps to check which type or types of OSH service organisation an employer can adopt for each company establishment.

The preceding description underscores the prevalence of themes pertaining to labour relations in comparison to those associated with OSH topics. The majority of simulators offer assistance on issues commonly addressed by the informational services of ACT, thereby facilitating quicker response times for users and improving the efficiency of inspectors' time management.

The two simulators most relevant to OSH matters are the *Simulator to determine the probability of the existence of asbestos* and the *Simulator of the organisation modality of OSH services*. These have somewhat different characteristics compared to the others, as they do not provide immediate answers to users. Instead, they offer general guidance rather than addressing specific issues.

The *Simulator to determine the probability of the existence of asbestos* uses the characteristics and construction date of buildings to help the employer understand the likelihood that these buildings contain asbestos and may require a specific inspection or intervention. Similarly, the *Simulator of the organisation modality of OSH services* asks the user for a series of details about the company (such as location, economic sector, number of workers, number of establishments, etc.), and based on the provided information, it proposes organisational modalities for OSH services as outlined by law (e.g. internal, designated employer/worker[1]).

These are, therefore, simulators that offer an initial diagnostic but require a more detailed analysis or a specific intervention request afterwards. These characteristics, coupled with the fact that they are primarily aimed at employers and require a reasonable level of literacy in OSH matters, may explain why they are the simulators with the fewest accesses (see Figure 6), compared to the other simulators, which are more focused on common questions from employers and employees and provide very concrete and clear answers to specific issues.

Labour inspectors promote the use of these tools and inform workers and employers about their functionalities.

[1] In a company participating in this model, the employer or a designated worker receives a specific OSH training and thus compensates the obligation of contracting an external prevention service (see case study PT7 and main report)

'I'll give you the example of the simulators. An employment contract that ends, if they [employers] have doubts, there is no need to pass the responsibility on to the accountants. Because that's what they do: they pass the responsibility on to the accountants in terms of hiring... in terms of expressing interest, which is no longer possible now, but when it was possible, it was the accountants who did everything. We also explained that your accountant can use our simulators to see if the worker is entitled to compensation …. We have simulators to calculate compensation. We're encouraging them to use the simulators. As a rule, we don't use the simulators ourselves [during the visits]; we use them for inspection work [to inform regarding the existence of this resource]. At the information level, we tell them [workers and employers] where they are, how to use them, and what they use to help them. That's because if we use them based on the information they're giving us orally, things will go wrong. As a rule, we pass on the information, tell them where it is, and, if necessary, demonstrate how to use it.' (Labour inspector, Male, 15 years of seniority)

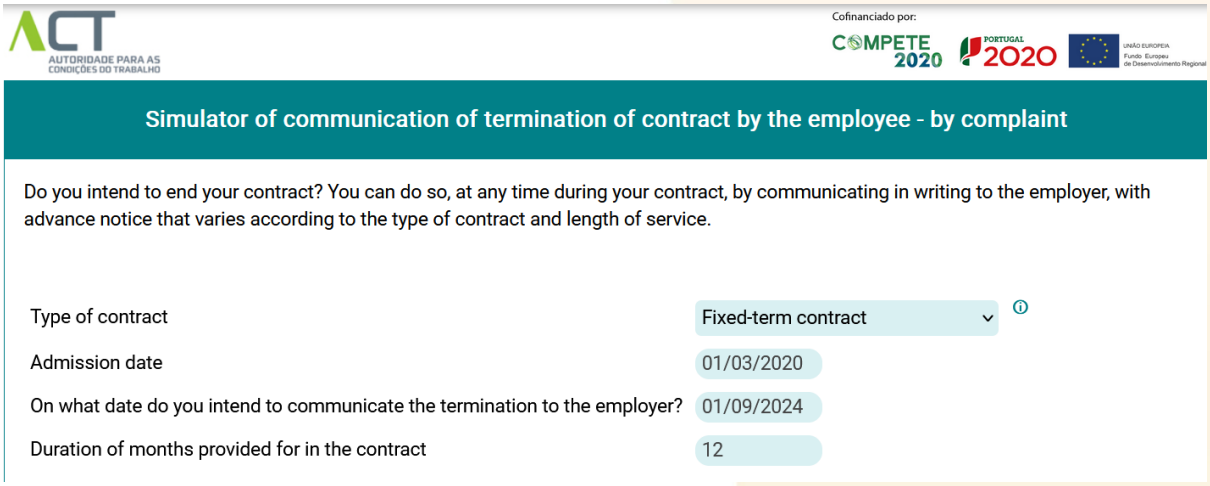
Therefore, to exemplify how this tool can be used, a fictitious case example is presented below.

Practical example number 1: João Ferreira's case

João Ferreira, aged 34, works in a company in Lisbon. He is a software developer with a fixed-term employment contract. João joined the company on 1 March 2020, and after three years of dedication and professional growth, he has decided that it is time to look for new opportunities and challenges. Having made this decision, João intends to notify his employer of the termination of his employment contract on 1 September, respecting the required notice period.

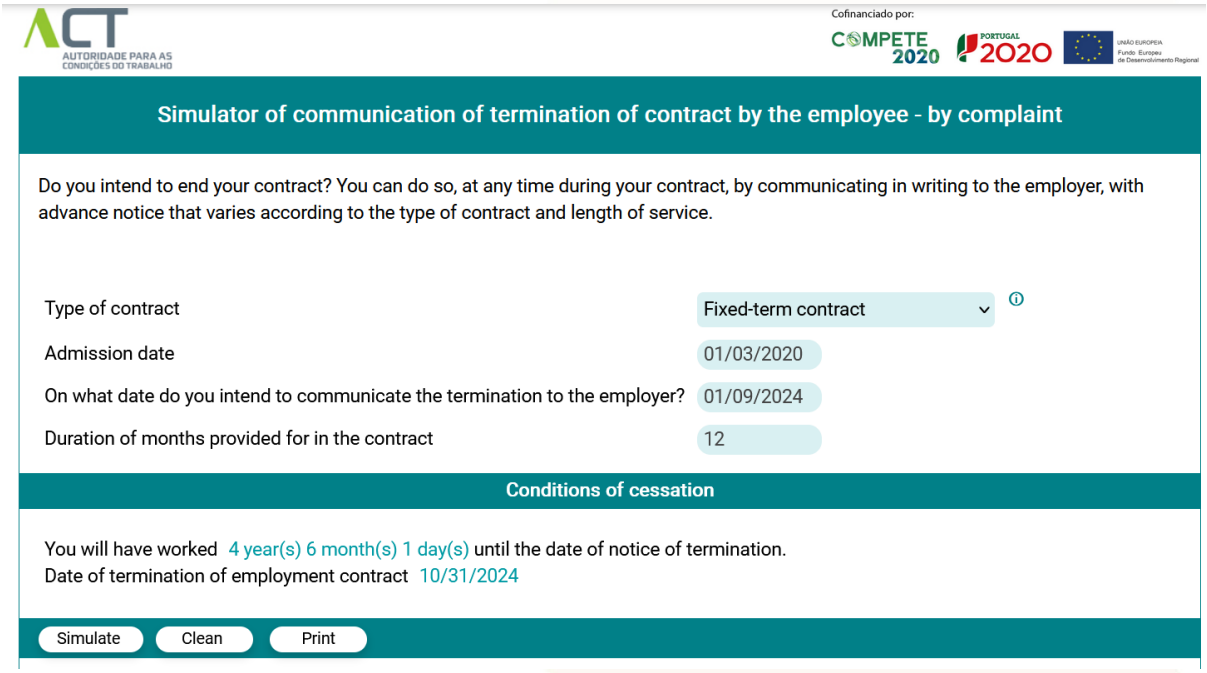
João Ferreira's fixed-term contract was expected to last 12 months, renewable annually. He had already had two renewals, totalling 36 months of work at the company up to his decision to terminate his contract. Considering this information, João consults ACT's homepage to use the simulators to ensure he has complied with his employer's notice to cease contact (See Figure 3).

Figure 3: A practical example of using ACT's digital simulator regarding the communication of termination of the employment contract by the employee



After entering the data relating to his employment contract, João used a simulator to calculate the estimated date on which his contract could be terminated. The simulator revealed the estimated time he will have worked until the notice of termination of employment and the expected termination date. For João, that date would be 31 October 2024 (See Figure 4).

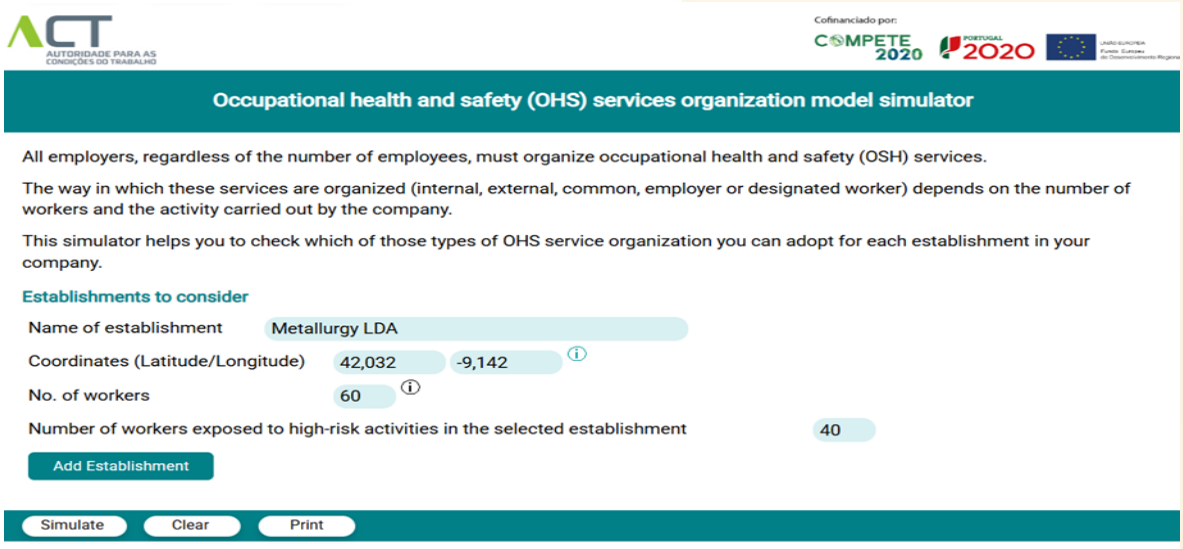
Figure 4: Results obtained from the use of ACT's digital simulator



Practical example number 2: The case of a Metallurgy company

METALLURGY LDA is a medium-sized metallurgy company located in the north of Portugal, employing 60 workers. The company is classified under the Portuguese Classification of Economic Activities (CAE[2]) number 24510 - Casting of Iron, out of which 40 workers engage in high-risk activities. Unsure about the appropriate OSH service modality to select, they turned to ACT's digital simulator for guidance on the organisational modality of OSH services.

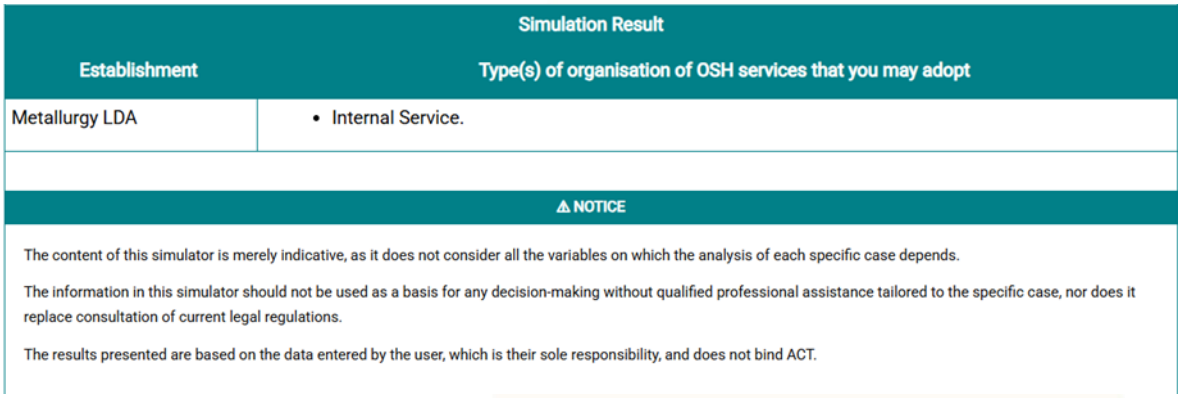
Figure 5: A practical example of using ACT's digital simulator regarding the organisation modality of OSH services



In this particular instance, the simulator recommended the establishment of internal OSH services, as illustrated in Figure 6.

[2] CAE is aligned with the International Standard Industrial Classification of all economic activities (ISIC) and NACE.

Figure 6: Results obtained from the use of ACT's digital simulator



Simulation Result	
Establishment	**Type(s) of organisation of OSH services that you may adopt**
Metallurgy LDA	• Internal Service.

⚠ NOTICE

The content of this simulator is merely indicative, as it does not consider all the variables on which the analysis of each specific case depends.

The information in this simulator should not be used as a basis for any decision-making without qualified professional assistance tailored to the specific case, nor does it replace consultation of current legal regulations.

The results presented are based on the data entered by the user, which is their sole responsibility, and does not bind ACT.

Degree of innovation

The effort to digitise and simplify access to ACT's information channels is considered an innovative practice in the country, inscribed in the efforts done to reinforce the Labour Inspectorate's action within the scope of the Decent Work Agenda.[3]

The creation of these digital simulators was made possible through SAMA funding, part of the European Social Fund initiative focused on modernisation projects in public administration, under the COMPETE2020 programme. The tools were initially developed in Portuguese, with the browser providing translations into English, French and Spanish to accommodate the primary languages of the workforce in the country.

Approach

The development of these technological tools follows a pedagogical approach. Information is made more accessible to promote compliance with OSH requirements and facilitate contact with ACT's communication channels, but labour inspectors also promote the use of these channels during in-person inspection visits.

What was achieved?

The availability of simulators and chatbots allows workers and employers to access technical information quickly and directly. After the launch of ACT's new portal, by 16 September 2024, the chatbot had over 200,000 interactions (See Figure 5) and the digital simulators had over 11 million visits during 2023 and 2024[4] (See Figure 7).

Chatbot

Number of users in 2023 and 2024

2023	**2024**
141,926	111,865

[3] As can be seen at: https://www.portugal.gov.pt/download-ficheiros/ficheiro.aspx?v=%3D%3DBQAAAB%2BLCAAAAAAABAAzNDI2MgUAmp2vnQUAAAA%3D

[4] Data collected between 1 January 2023 and 15 September 2024.

Simulator	Number of users in 2023 and 2024	
	2023	**2024**
Compensation simulator for termination of employment contract	4,135,921	3,500,591
Compensation simulator for training credits due upon termination of employment	469,985	596,637
Simulator for communicating the termination of a fixed-term contract – on expiry	413,059	287,071
Employee termination notice simulator – by termination of contract	403,769	469,216
Simulator for absences due to the death of a family member	317,497	462,725
Holiday simulator	423,209	470,953
Simulator to determine the probability of the existence of asbestos	13,293	7,865
Simulator of the organisation modality of occupational health and safety services (OSH)	11,452	7,454

As previously mentioned, the characteristics of the last two simulators on the list, combined with the fact that they are primarily aimed at employers and require more specific knowledge of OSH matters, may explain why they have fewer accesses. In contrast, the first six simulators in Figure 6 show significantly more accesses, especially the first one. One reason for this could be the frequency of such queries among employers, employees, and also accountants, lawyers and HR professionals, making the target population for these simulators much broader.

The most popular simulator was the 'Termination of employment contract compensation simulator', which calculates the amounts stipulated by law for situations of employment contract termination, including compensation, when applicable, and any amounts relating to holidays, holiday pay and Christmas bonuses.

When it comes to the impacts on the labour inspectors' work, the tools can facilitate the interaction of the tools' users with the labour inspectors when using ACT's information service (e.g. inspectors mention that workers often come to the service with the results of the simulators they used). Implementing these artefacts thus enables technology to be operated as a tool for promoting decent working conditions and allows labour inspectors to focus on situations that may require a deeper and more specialised analysis. Despite these perceived benefits, no further data have been collected addressing their efficiency.

Success factors and challenges

'In general, labour inspectors mention that these tools have worked effectively. While some issues remain (e.g. the need to respond to more complex and specific situations and further dissemination of these tools), ACT is continuously updating these instruments to improve them. Furthermore, as indicated by a labour inspector, there are specific details for which the simulation may not be adequately equipped to provide responses.

'Often, workers come here, do the simulation quickly and don't realise all the nuances. Sometimes, there are also specific situations, such as when there is a prolonged lay-off or a lot of breakdowns. This requires a more careful analysis because you have to take some nuances into account [to calculate the compensation amount].' (Labour inspector, Female, 15 years of seniority)

Promoting the tools at a national level would be welcome, as it would increase awareness of their existence and use so that they are more widely used by the Portuguese population.

Transferability to other EU Member States

Implementing technological tools such as simulators and chatbots is recommended but requires adaptation, considering each Member State's contextual characteristics and needs. However, making these resources available is considered an ally for labour inspection action and compliance with OSH requirements.

Further information

Autoridade para as Condições de Trabalho: Homepage: https://portal.act.gov.pt/Pages/Home.aspx

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