AI-implemented toolkit to assist users with career "configuration": The case of Create Your Own Future

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ABSTRACT

Labor markets (LMs) are witnessing an acceleration that is fueled by digital disruption. The main drivers of this change are the transition to the digital paradigm (that is, Industry 4.0 and Smart Industry 5.0) and the socioeconomic effects of the ongoing health emergency. In addition, the recent Russia/Ukraine conflict has resulted in the migration of an increasing number of refugees across EU countries who may also need to change their career focus in order to find job opportunities in their host countries. These new changes in the LMs primarily affect lower-skilled workers and those who lack or have low levels of digital literacy. In such a situation, there is a need for a solution that can be adopted on a mass scale to reallocate human resources in order to help the most vulnerable workers who may face difficulties in maintaining or finding new job opportunities. The present paper aims to contribute to research on possible solutions to help individuals become career adaptable. To this end, we present the case of Create Your Own Future (CYOF), an employability support toolkit by Saffron Interactive, to demonstrate how an AI-implemented toolkit can support individuals in configuring a road map for their career pathway. CYOF is designed to support individuals on their personal journey towards sustainable employment and provides individuals with a way of determining their vocational personality and find a tailored roadmap to progress in their career or a pathway to a new one. The CYOF toolkit could represent a large-scale solution to help workers become career adaptable and help them face an increasingly changing and unpredictable employment landscape.

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CCS CONCEPTS

•Human-centered computing~Human computer interaction (HCI)~HCI design and evaluation methods~User models •Human-centered computing~Collaborative and social computing~Empirical studies in collaborative and social computing •Computer systems organization~Real-time systems •Social and professional topics~User characteristics

KEYWORDS

Job career configuration, Skills assessment, Digital disruption, Employability support platform

1 Introduction

The Labor Market (LM) has been facing a reskilling crisis because of digital disruption, even prior to the COVID-19 pandemic. However, the pandemic has accelerated this issue, with the main drivers being the transition to the digital paradigm (that is, Industry 4.0 and Smart Industry 5.0) and the socioeconomic effects of the ongoing health emergency. In particular, it has affected those who are in more manual jobs and have historically had lower educational attainment [16].

The LM is changing, as are the expectations of how individuals balance work and life. For example, many people have decided to become self-employed. This reflects the need for flexible work, which itself has implications for the need to learn and re-skill. As a result of this fast-evolving scenario in the LM, individuals are required to "re-configure" their career by updating their professional skills so that they are in keeping with the LM's new dynamics and requirements. Workers who intend to become career adaptable first need to become aware of their skills and identify the required reskilling process and the extent of reskilling required based on their personal and professional goals. This requires a holistic review of not only what skills they currently

employ in their role, but also their transferable skills. They need to be supported through this assessment with a user centric tool. A simple-to-use tool could be useful to individuals who want to embark on such a skills assessment initiative.

Currently, there are only a few user toolkits that can be applied on a mass scale to provide a personalized support system that can help workers in their career decision making. The present paper aims to foster the ongoing debate on how to support workers facing an increasingly changing and unpredictable employment landscape. To this end, the paper studies the case of Create Your Own Future (CYOF), an employability support platform (https://createyourownfuture.unionlearn.org.uk/) created by Saffron Interactive. CYOF is based on the career construction theory proposed by previous studies [12, 13], and is designed to support individuals on their personal journey towards sustainable employment by enabling them to harness the valuable transferable skills that they have already developed and identifying the areas in which they may need to reskill or upskill, depending on their professional goals. The overall aim is to encourage career adaptability and ongoing upskilling. The platform is web-based and implemented with AI technologies, and it is integrated with a personalized service configuration system that enables users to create a tailored action plan at the end of each user journey. In particular, CYOF is designed to enable and encourage the most vulnerable workers to take charge of their own future. Indeed, it is essential for users to see career planning and skills development as an attainable and ongoing process, and not as a one-time fix.

This paper explores the CYOF tool as an interface to deliver personalized services for career change and orientation (i.e., educational options and job opportunities) by describing its design and development within the product/service configuration framework. The platform uses insights from behavioral science, and was also designed based on design thinking principles to meet workers'/users' requirements and deliver a sustainable and responsible toolkit for career configuration.

The aim of studying CYOF is to contribute to fulfilling the pressing need in LMs for user toolkits that can provide concrete support for workers who are looking to re-configure their career paths. Moreover, it would be interesting to explore whether CYOF is a good model based on which similar tools can be developed and made accessible at the international level to be suitable for other LMs internationally.

The paper is structured as follows: section 2 provides the theoretical background, section 3 describes the methodology, section 4 describes the case study, section 5 discusses the findings on the specificities of the CYOF user toolkit, and section 6 presents the conclusions drawn.

2 Theoretical Background

2.1 Application of Labor Market Intelligence for Job Search

The channels through which job seekers find employment opportunities have significantly changed over the past 15 years, and some channels have been created anew. The web is increasingly used by employers and job seekers to advertise demand and supply, by exploiting the vast variety and enormous potential of its communication channels. In particular, IT technologies have led to the creation and diffusion of new channels, such as e-recruitment [8], through which the candidate selection and recruitment process is implemented through internet. The e-recruitment process starts with simple job posting websites on which recruiters can post jobs with their contact information and then wait for candidates to find the postings and apply. Some of the current online recruitment tools are job boards, such as Monster and CareerBuilder, and job aggregators, such as Jobrapido and Indeed, which collect jobs posted by companies; both these tools allow job-seeking candidates to apply directly [8]. In more recent years, the European Labor demand has grown rapidly. This is evident through specialized web portals and services, such as the Digital Skills and Job Platform, which focuses on digital skills only and offers a map of employers' levels of digital literacy in EU countries.

The exponential growth of the new job search channels is fostered by Labor Market Intelligence (LMI), with which information related to LMs (e.g., skills, competencies, qualifications, and occupations). As well as all the ICT techniques and services used for labor information management (e.g., the AI algorithms used to analyze labor market data), can be honed to support decision making, policy design, and evaluation activities [3]. AI, in particular machine learning algorithms, poses a new set of opportunities—and challenges—for work and workers, as will be explained in the next paragraph. Importantly, AI and data science have contributed immensely to the development of information systems and tools for the analysis, monitoring, and classification of labor information, which are also referred to as LMI systems. For example, WoLMIS is an LMI system that classifies job vacancies with respect to LM taxonomies by performing text classification based on machine learning techniques [2]. A more recently developed system is WETA, which was described by Mercorio et al. [7]: it is a domain-independent, knowledge-poor method for automatic taxonomy alignment via word embedding. WETA was specifically designed to use AI algorithms to align the national taxonomies of EU countries so that they are in line with the European Skills, Competences, Qualifications and Occupations taxonomy.

There are also a growing number of commercial skill-matching products such as BurningGlass, Workday, Pluralsight, EmployInsight, TextKernel, and Google. All these systems and products prove that the interest in effective solutions in the domain of LMI is strong and active. However, the majority of the tools and systems mentioned above support workers in job search functionalities. A few of these provide reskilling or upskilling processes, but to the best of the authors' knowledge, none of them can be considered as a service configurator toolkit for careers. More specifically, none of them deliver a personalized match between the user's actual skills and those required in the labor

market with a focus on occupational profiles suitable to each user and the learning that can support him/her in getting into the profession or progressing his/her career.

2.2 Online User Toolkits as a Mass Customization Strategy

2.2.1 Online Toolkits for Delivering Personalized Services. Research on mass customization as a business-to-customer selling strategy via online sales configurators and its benefits can be applied to configurators for services too [14]. This can be achieved by following the general steps for scoping configuration projects [15]: that is, exploring the problem space and the solutions space, and aligning both spaces.

Online sales configurators (OSCs) are knowledge-based software applications that support users in selecting from predefined product/service offerings the solution that best suits their personal requirements [1, 5, 6, 18]. The functionalities of an OSC support its users in their decision-making processes by reducing choice complexity (the amount of information processing that is necessary to make a decision). Likewise, it is acknowledged that online product configurators can support users in identifying their own solutions while reducing computational and non-computational sources of decision difficulty [4, 10, 17, 18].

Create Your Own Future fits the definition of an OSC in the capacity of a service configurator [14]. The online service personalization strategy enabled by CYOF can be described by using the framework developed by Shafiee et al. [15] for scoping and managing the knowledge of configuration systems. This framework provides a structured step-by-step approach for determining the scope of the configuration system and the requirements of such a system, as well as defining, collecting, and ultimately managing the knowledge of the system. The steps of the framework are as follows: (1) determining the scope of the configurator, (2) knowledge acquisition, (3) modeling and knowledge validation, and (4) documentation and maintenance.

3 The case of Create Your Own Future

Data and information have been provided by Saffron Interactive. The software house developed the tool after having developed a prototype originally for a E+ project but goes beyond this in its use of design based thinking and AI integration. In the next sections, the case study is presented via detailed descriptions of the design, development, and implementation steps and all possible feasibility challenges.

3.1 Aims and Methods of Tool Design

The CYOF tool is designed to guide users through a journey that involves assessing their skills and their competence level in those skills and then matching the result to job profiles that require the same level of competency and skills. Apart from matching users to suitable job profiles, users are also matched to

available accredited learning courses that can be accessed through the platform. The user is then guided to choose the learning and job profiles they are most interested in pursuing and are provided guidance on building an action plan using SMART goals. The job profiles are described through data on salary levels, hours of work, progression, day-to-day duties, and available jobs, as well as other useful information that enables users to explore different opportunities that match their work–life balance to available opportunities. All users of CYOF can benefit from the skills assessment that a career configuration system provides.

In the next sections, the CYOF tool is analyzed according to design thinking principles to explore its service personalization levels. In order to evaluate to what extent CYOF complies with the steps for product/service configurators described in the literature on mass customization, we examined the parallelism between the steps adopted to design this tool and the steps required to scope a configuration project [15].

3.1.1 Overview of Design Thinking Principles that Enable Service Personalization for Configured Pathways. Since career change and personal circumstances vary considerably and are highly sensitive and emotional topics, the Saffron worked to ensure that the technology also had a human centric approach. To this end, the design thinking steps used in developing CYOF were empathize, define, ideate, prototype, and test [9, 11].

The Saffron team held workshops with 220 participants to understand users' needs, barriers, motivations, and challenges. These participants ranged from 24 to 65 years of age, had varied levels of educational attainment, comprised an equal number of male and female participants, and were from all parts of the UK. This helped us to define four national personas or characters, which then became our AI mentors. These mentors can empathize with the users on an ongoing basis as they have been developed from experiences that are a blend of the types of people that would use CYOF. The empathize phase helped to define the barriers and motivators of the target audience. This was fed back to the same user group in order to come up with a problem statement that everyone agreed upon.

The team then ideated and produced lo-fi mock ups of a user journey for each of the persona types. This information was again fed back to the user group and refined again in order to build a digital prototype. This prototype was tested by the user group and refined based on additional feedback over two more feedback loops before it was rolled out nationally. The main challenge posed to the initial assumptions of the tool was that the empathize phase it was revealed that a large proportion of the target group had learning difficulties or learning disabilities. The design, therefore, focused on ensuring that assistive technologies could be fully utilized. In addition, the ease of user experience and access in multiple formats was needed. It was this stage that helped the Saffron team to ideate the need for voice and text recognition as well as the need for sentiment analysis. The End users and tester groups included individuals with autism, dyspraxia, dyslexia, dyscalculia, and color blindness, amongst several others.

3.1.2 Pre-development and Re-iterative Models—Defining the Problem Space. During the pre-development stage, Saffron conducted over 15 focus groups consisting of 60 work coaches who supported individuals or participants of the target cohort profile. They also spoke to 160 target users. By combining the findings from these focus groups, along with design-based thinking principles, it was established that the solution would need to cater for:

- Low literacy skills
- Low digital skills
- Neurodiversity
- Low self-esteem
- Low career aspirations
- Low educational attainment
- Low incomes

In addition to the above considerations, Saffron needed to consider individuals with previous bad experiences with education who may be resistant to learning, as well as those who were "time-poor" (as many individuals were juggling more than one job to make ends meet). A route to fund free accredited training was also needed for those with limited financial resources to spend on learning.

Large employers that are unionized in the UK tend to have learning representatives within their organizations who are given allocated hours to encourage development within their workforce. Saffron partnered with these union learning representatives, as well as target learners, to design, develop, test, reiterate, refine, and deploy CYOF.

Desktop research that was done by the Department for Education for the National Retraining Scheme was also used to define user personas across the age range of 24 to 65 years and whose education level was below a bachelor's degree. Design reiterations were done at four main milestones in order to take on board user feedback and refine the design.

3.1.3 Users' Needs—Exploring the Solution Space. When building CYOF, Saffron used the career construction theory by Mark Savickas [12, 13] as a basis for the theory of change. Saffron incorporated the users' need to determine their vocational personality and fit within their life goals, ambitions, barriers, and motivations, in order to ignite the 4Cs of Career Adaptability—Concern, Control, Curiosity, and Confidence. Saffron added "Commitment" based on the contribution of Jenny Bimrose from the University of Warwick and another C—"Capability"—based on its own experience.

Individuals with high levels of the six Cs are likely to be more career adaptable. Concern refers to concern for the future—it is evident in those who look ahead and plan for the future. Control is defined as an individual's perception that they can shape their environment and themselves using persistence, determination, and self-discipline. Curiosity is the ability to explore different avenues and look for different opportunities. Confidence is the ability to stand by your own aspirations in the face of obstacles and perceiving that you have the ability to overcome them. Commitment is the capability to keep going even when pressures

make achievements difficult. During the design process, Saffron discovered, in particular, the need for Capability (or capacity). This refers to whether the individual has the means or the capacity to access the resources needed—physical or mental—in order to become career adaptable. This model was specifically chosen to build career adaptability within individuals so that after one career change, the principles would build resilience and capacity within individuals to make further career changes, as demanded by the labor market.

3.1.4 AI Mentors, Natural Language Processing, and Sentiment Analysis—Aligning Problem and Solution Spaces. A key benefit of utilizing AI to support workers in becoming career adaptable is that coaching and mentoring have been shown, in many different constructs, to yield a better outcome than the efforts of an individual trying to become career adaptable on their own. Accordingly, Saffron created an AI-enabled video mentor to help individuals determine goals, ambitions, barriers, and find meaning in their work.

By using AI, Saffron was able to optimally replicate a coaching or mentoring experience on a mass scale (a requirement of the project) but a personalized experiences for the user. Specifically, with the AI feature of CYOF, Saffron made it possible for individuals to choose a mentor they are most comfortable with. Each of the four mentors (see Figure 1) were chosen based on comprehensive focus group research that included a range of ages, ethnicities, personalities, digital experiences, and career histories.
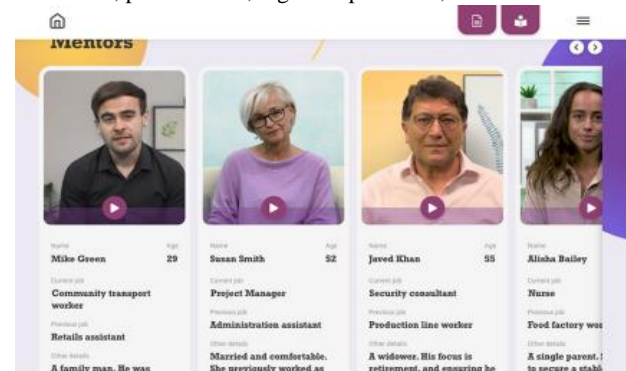

Figure 1: AI mentors available for users to choose from

Additionally, with CYOF, individuals are able to "talk" to their mentor through their phone, tablet, or desktop device with the use of voice recognition so as to accommodate both those with low digital skills capability and neurodiverse individuals. The ability to talk, text, or upload videos at any point enables choice and feelings of control. It immerses individuals in the ability to reflect and feel like they are having a lifelike conversation—with one key difference—the mentor does not have the ability to be judgmental. In addition, with the help of sentiment analysis, the tool was designed so that individuals are able to have a productive and personalized conversation with the AI coach, who provides support based on what the learner has indicated about how they

feel or how much they understand the task.

Implementation of voice and text recognition has certain limitations. For example, recognizing accents or rambling discussions are difficult with AI-based tools, so significant testing had to be done in all the personalized pathway combinations to highlight instances where alternative options to voice and text needed to be used, such as menu options that could help the learner proceed. If the "mentor" receives a few indications that the user has not been properly "understood," they are referred to human help. As the human help has access to that particular user journey and can identify through a dashboard where the user is "stuck," targeted support can be provided at the time of need, so that the learner can quickly return to their digital journey. This enables the human touchpoints to be time critical, while keeping the motivation levels of users high, engendering user confidence in the rest of their digital journey, and using human resources in the most efficient and valuable way.

As mentioned earlier, the CYOF platform uses AI-enabled video mentors who represent a range of ages, ethnicities, personalities, digital experiences, and career histories. By having a real-looking and real-sounding person who has a similar background and history to guide their journey, the user is provided continuous personal guidance and support. The user can have interactive conversations with their mentor to discuss their feelings, aspirations, and confidence levels about achieving the future that they want. The AI-enabled mentor reacts based on voice and text recognition and sentiment analysis to direct the learner down a particular path, depending on what the learner has said and how they are feeling. In addition, reflective questions are asked by the mentor to enable the user to articulate their vocational personality and consider the benefits of changing careers, learning, and binding their intrinsic values to the value of their chosen pathway.

3.1.5 Skills Assessment and Career Matching—Delivering a Personalized Experience. Once the AI mentor has established key information about the user's employment status and comfort levels, the user works through a dynamic card-based skills assessment diagnostic (Figure2).
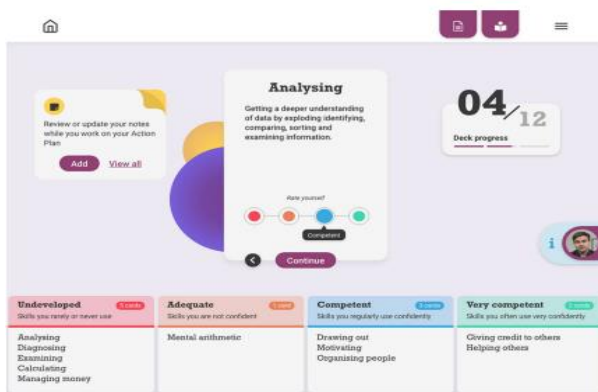

Figure 2: Card-based skills assessment

The self-assessment process encourages the individual to reflect on their existing transferable skills and recognize the value of the skills and experiences that they have gained throughout life—in the world of work and beyond. The learner progresses through 36 skills cards and is asked to rate their competency in each of the skills. They are, then, presented with personalized career and training recommendations, categorized by job families and then job profiles (see Figure 3).
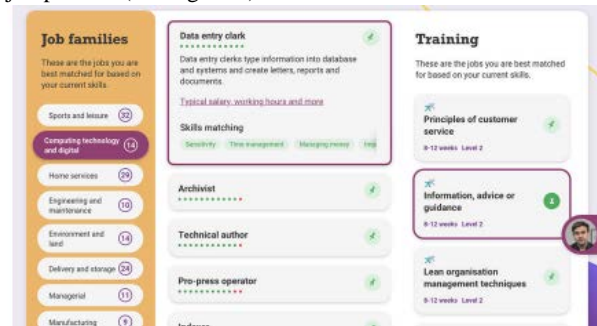

Figure 3: Job families and job profiles

The jobs recommended to the user are based on what the user identified as their "strongest" skills during the skills assessment. The user rates themselves as "undeveloped" (1 star), "adequate" (2 stars), "competent" (3 stars), or "very competent" (4 stars) in each skill. CYOF then matches job profiles, each of which has a clearly defined list of skills relevant to the role, to the user based on this graded skills rating. The relevance of each skill to a job profile was established by Saffron by working with a subject matter expert in the UK labor market who reviewed 1527 job profiles in the UK National Careers Service and matched the 36 skills in the CYOF tool as relevant (or not relevant) to each job profile (see Figure 3). Thus, with this feature, users are able to quickly see which careers best match their own transferable skill set.

Each job profile recommendation clearly identifies the relevant skills that the user already has and which of the relevant skills they need to develop further. The "pin" functionality then allows the learner to save any jobs they want to explore further and complete goals towards. The accredited training in the platform that could support their application and skills-building processes are also highlighted, and these can also be pinned. Pinning these jobs allows them to be saved to the user's dashboard, from where they can build their personalized action plan.

Action Plan gives the user the opportunity to create an interactive "to-do" list, which they can update and refine as often as they need. Action Plan is designed to allow users to clearly state what their goal is, how they will achieve it, and when they will achieve it. The user is then able to review and edit their Action Plan whenever they desire, and also mark it as complete once it has been achieved. The user is able to create new Action Plans at any time, and this encourages a continuous learning journey and self-assessment. At the end of the user journey, the learner will have a continually evolving dynamic dashboard

comprising an interactive learning and development portal that unites all the stages of the user's journey so far.

This feature offers the user an engaging hub to which they can return to easily access their skills assessment and career-matching results, training opportunities, pinned careers and training, and their Action Plans. In addition, this feature provides learners with a personalized overview of their individual journey towards sustainable employment, created from the multiple stages of assessment and personalization established through the user's journey through the CYOF tool. As they complete their goals, they get motivational badges and encouragement from their video mentor, as well as a visual overview of how far they have progressed and the roadmap ahead (Figure 4).
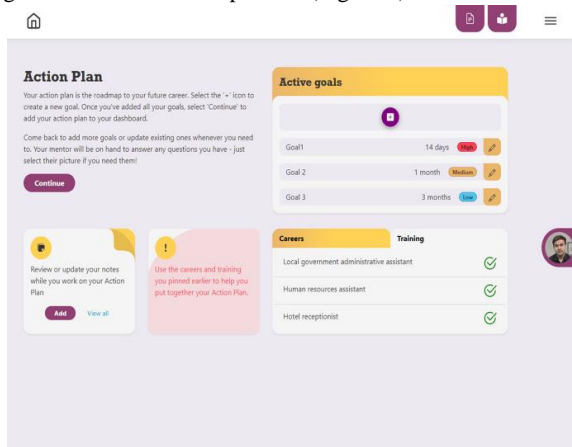

Figure 4: The learner's Action Plan page

3.2   Results

3.2.1 Results of Tool Evaluation The results that show the platform, during the period of evaluation, helped build career adaptability in two ways. In general, the target audience was individuals with low levels of educational attainment who had been out of work for more than a year. On average, the results showed that not only had confidence and feelings of control increased dramatically, but also, learning was actively taken up, goals towards changing careers were formed in the Action Plan, and there was anecdotal evidence of change in careers, for example, from a retail assistant to a project manager in one case. Another prominent example is that of a high-functioning autistic youth, who having spent over 200 h going through the employment journey and learning journey, received four offers of employment in a career that he had previously not thought he had the skills for, and is now actively engaged in one of the companies. As the period of evaluation was relatively short, that is, five months, these are early signs that the platform can support career adaptability, but more analysis is needed to confirm these results. Individuals who were enrolled in the platform for more than the evaluation period of five months have shown continual learning of more than one course. This, again, indicates that

learning new skills or things as an important part of career enhancement or change is possible through the use of AI.

3.2.2 Results from Users' Responses. Despite the challenges faced as a result of the global pandemic, in CYOF's pilot project, just under 500 users spent a combined 51,120 minutes on the platform over a period of 5 months. This enabled Saffron to glean some incredible data insights. In terms of confidence and control, there was a 40% increase in users who reported feeling confident to take on their future after working through the platform, compared to when they started. In addition, over 90% of the users cited that the platform encouraged them to consider careers they had never previously thought about—an indication that CYOF was able to equip and nurture individuals to take their first steps towards career adaptability. The platform also received an overwhelmingly positive response in terms of user experience, with 80% of users feeling that their AI mentor was both supportive and engaging. Both neurodiverse and neurotypical users felt that the experience of using the AI mentor was particularly useful at the beginning of the journey when career aspirations and concerns were being addressed, as well as when career recommendations had been made. This shows that the AI capability and sentiment analysis, alongside voice–recognition integration, was of a high quality.

Most individual features of the platform were also rated highly: 100% of users evaluated the skills assessment, action plan, and dashboard as being highly intuitive and easy to use. As users also completed learning in the platform, the bite-sized modules that supported career adaptability and turned thought into action were also rated highly.

4   Discussion

When creating CYOF, Saffron determined that the tool must be designed to:

- Be led by design-based principles, taking into account extensive target audience feedback.
- Include digital and face-to-face support to motivate learners and encourage action to become career adaptable.
- Assess transferable skills and provide a direct line to different careers and actual job boards, including expected salary levels for those jobs.
- Prompt users to take up online learning as a way to boost their employability and develop their skills.
- Provide free resources to training and access, both digitally and through union learning centers, by welcoming spaces located in workplaces, union offices, and also in local communities where members can explore learning, opening up learning opportunities for those who may otherwise face too many barriers, and encouraging social learning.
- Measure engagement using analytics and provide data and insights into barriers among learners when it comes to making a career change.

CYOF deploys multiple functionalities to provide a personalized service in response to each user's requirements. This includes choosing an AI persona mentor, the skills assessment that leads to personalized job and training recommendations, and the opportunity to build a personalized Action Plan. By adopting the process of service personalization, CYOF helped individuals to become career adaptable and to consider new sectors for work by personalizing the experience for them, that is, to their knowledge and interests. The user journey is continuous and accessible at any time on users' dashboard.

4.1 Outline of Create Your Own Future as a Personalized Service Configurator

To determine whether CYOF acts as a service personalization toolkit, we have explored the parallelism between the steps in the design of the CYOF toolkit and the steps described in the framework on how to scope a configuration project [15] to determine if they correspond. *Exploring the problem space*: this step corresponds to the first passage in configurator design for product/service personalization: Determining the scope of the configurator. As described in section 3.1.1, with CYOF, the problem was identified through focus groups and interviews. Moreover, a partnership with union representatives was essential to involve workers and users of the tool. *Exploring the solution space*: this step corresponds to the second passage in configurator design for product/service personalization: Knowledge acquisition. As described in section 3.1.2, CYOF was designed using the career construction theory and modeled to create a career adaptability process. Again, focus groups and collaboration with individuals were essential to the knowledge acquisition phase. *Iteratively aligning both spaces:* this step corresponds to the third passage in configurator design for product/service personalization: Modeling and knowledge validation. Sections 3.2.1 and 3.2.2 provide all the details about how AI and technologies were designed to be able to help users in skills assessment, for example, through sentiment analysis. The assessment and mentoring process correspond to the modeling and knowledge validation steps in terms of service personalization of the CYOF toolkit.

Finally, with regard to documentation and maintenance, the CYOF platform records every decision point and conversation, allowing rich data analytics to be gained. Every user journey is unique but has between 200 to 300 recorded points, so that every action or reaction a user has can be analyzed. The "back end" data can also be used by human advisors/mentors to obtain a "real-time" indication of when a user is not engaging and, therefore, needs human intervention. This offers human advisors the opportunity to reach out with a call, an email, or text, in order to re-motivate the user to complete their goals or learning. Thus, although CYOF is a "digital first" tool, it is supported by human advisors. Interactions of the users on the platform are recorded for three purposes. The first is to personalize the pathway and user journey dynamically. The second purpose is to analyze the choices and conversation so as to recommend human help, and

simultaneously, advisors are alerted that the user may need human support that the platform cannot provide. The third purpose is to allow the platform to "nudge" users to complete their goals and detect user activity or inactivity so that the digital mentor can send notifications to the user, reminding them of their goal, encouraging them, and inviting them back into the platform to complete their goals and learning (Figure 5).
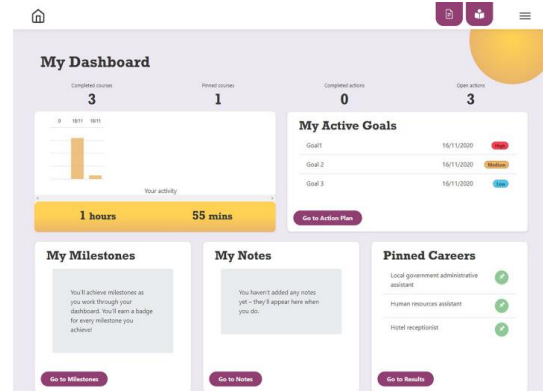

Figure 5: The learner's continually evolving dynamic dashboard

5 Conclusion

Even though becoming career adaptable is a pressing need in the current LMs at a global level, research has revealed that there are only a few web-based tools that focus on this issue, with the majority of web-based tools focusing on job search functionalities and primarily digital skills. Saffron Interactive's CYOF helps users on their journey towards career adaptability by re-configuring their career pathway through an end-to-end journey and a high degree of personalization of users' career pathway. Specifically, CYOF delivers a personalized match between the user's actual skills (based on their competence level for various skills) and those required in the LM, with a focus on occupational profiles that each user would be suitable for and the learning and skills that can support their entry into the profession or the progress of their career. The tool then allows for the creation of an action plan personalized to each user's profile to ensure that actions are taken towards achieving the intended goals for a change in career or progression of the chosen career pathway. As a digital first platform, it uses an AI mentor to uncover barriers and motivations for the individual to become career adaptable, and the mentor encourages and guides the user throughout their journey. Sentiment analysis is also used to analyze the confidence and motivation levels of the user and feelings of control, based on which the mentor continues to encourage the learner. As well as to analyze when human help can be employed if necessary.

CYOF is a remarkable case of an AI tool designed to provide individuals with instruments to personalize their future in terms of their professional career. The present paper aims to contribute to research on possible solutions to support individuals in becoming career adaptable by presenting the case of CYOF. The presented case demonstrates how an AI-implemented toolkit could support individuals in configuring a road map for their career pathway. The results of the presented case provide concrete evidence for the usefulness of the tool based on the evaluated indicators.

The CYOF tool is now being used in government initiatives to kick start the economy following the pandemic. In addition, larger employers may also benefit from this toolkit. Moreover, the CYOF toolkit lays the foundation for similar toolkits that can be developed and become accessible at the international level with the possibility of adoption for different Labor Markets. This toolkit represents the possibility of adaptation also to support the increasing number of refugees across EU countries who may also need to pivot their career focus to find job opportunities in their host countries.

CYOF can also be used to sell education and training courses delivered by providers who can benefit by adopting it, for example, universities. For example, it could be provided as a tool that is accessible on university websites on which master's and vocational courses can be purchased. Research limits. The tool was produced in partnership with the developers, Saffron Interactive, and with funding from CareerTech Challenge Fund, which is a partnership between Nesta and the Department for Education in the UK. Since the tool had not yet been implemented on a larger scale, it was not possible to explore recent and additional data from its current usage.

Further research. CYOF was primarily designed to address the needs of inhabitants of the UK, or more specifically, London districts. However, many of the principles discussed are applicable to the design of similar tools at the European level. To this end, Saffron is now designing a toolkit named Value My Skills as an outcome of the E+ project entitled "European Midlife Skills Review" in consortium with universities and organizations from five countries (UK, Italy, Spain, Romania and Finland). Further research could address possible enhancement to give users an even better understanding of skills and occupational profiles demanded in Real Labor Market.

ACKNOWLEDGMENTS

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