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AI-generated content may be incorrect.RIAL/OAS BILATERAL COOPERATION BETWEEN THE MINISTRY OF LABOUR OF TRINIDAD AND TOBAGO AND THE MINISTRY OF LABOUR AND SOCIAL SECURITY OF JAMAICA ON LABOR MARKET INFORMATION SYSTEM**

**QUESTIONS BASED ON THE FIRST SESSION**

***Document prepared by the Ministry of Labour and Social Security of Jamaica***

Before answering the questions, there are two things that should be addressed. First, Jamaica’s new ILMS (Integrated Labour Market System) or LMIS has not been implemented yet. The presentation given highlighted the functionalities ELE is presently pursuing, and does not represent a fully implemented and integrated system.

The concept of SaaS – Software as a Service – is what is being used in the vast majority of software purchases presently. SaaS is a software delivery model where applications (in this case, the ILMS) are hosted by a provider and made accessible over the internet. The previously most used model (10 to 20 years ago) was the so-called on-premise software where the purchased software was installed and operated on hardware located within an organization’s own premises, such as the IT department’s data centers or server rooms. SaaS is, at this point, a thoroughly tested and widely used delivery model by most organizations and governments around the world. SaaS shifts the responsibility of maintenance, updates, and infrastructure management to the service provider (away from the internal IT department), allowing buyers to focus solely on the software’s features.

The key characteristics of SaaS are the accessibility (through any internet connection), subscription based (yearly or monthly, versus high upfront cost and continuous maintenance cost for on-premise), maintenance free (provider handles all maintenance for both software and infrastructure), scalability (SaaS solutions are built to easily scale to accommodate growing user bases or increased data needs), and security (the provider is responsible for protecting data and ensure user privacy).

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| 1. **What measures can be implemented to mitigate the risk of discrimination in AI job matching processes?** |

This is a very important aspect, and one that is getting a lot of attention. When it comes to matching job seekers to job openings (and vice versa), and especially when ranking the candidates or giving them a “match score”, it is important to “justify” the match (or rank or match score) so that the hiring organization can explain why A was preferred over B. The simplest way to be able to do so, is to make sure the AI being used is eXplainable (XAI) and Interpretable (IAI). In simple terms, this means that the match can be explained (human-understandable explanations) and “traced” (i.e., can be directly comprehended by humans). When the match (decision) can be understood by humans, it should be fairly straightforward to determine whether or not any discriminatory factors were incorrectly used to make the match (or ranking or match score).

Other aspects that are important here is to make sure that the datasets that are used to train the AI models encompass a wide a range as possible of demographics, experiences, and backgrounds. This would reduce the risk of the AI system perpetuating existing societal biases. While AI can streamline recruitment, human involvement remains crucial, both during recruitment itself but also as part of making sure the training data does not contain any biases. Integrating human review at critical stages to assess AI recommendations, especially in cases where nuanced judgement is required, is therefore important. This hybrid approach combines the efficiency of AI with human empathy and ethical considerations.

Further methods, such as conducting regular audits and bias assessments, establish ethical guidelines and compliance measures, and engaging in cross-disciplinary collaboration (e.g., collaborations with ethics, law, sociology, and computer science) can help design AI systems that are socially responsible and culturally sensitive.

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| 1. **Are there countries currently using similar AI-based LMIS systems? If so, could you share some relevant case studies or examples?** |

Yes, there are several countries that are currently using AI-based ILMS, particularly with regards to job matching. One of our consultants have experience from Norway and the Norwegian PES (NAV – the Norwegian Labour and Welfare Administration) where they are using an AI-based ILMS system. Unfortunately, NAV is not willing to divulge any of the technical details of their system, nor how they are using the AI. They have also refused to participate in a case study so there is no publicly available description of their system. The same is the case for Indonesia and their SIAPkerja system (from the Ministry of Manpower). This seems to be the “trend” of other countries where we suspect they are using an AI-based ILMS. We are therefore not aware of any relevant case studies or examples where we can discuss any details.

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| 1. **What were the major challenges faced during the implementation of the system, and what key lessons were learned that could inform future development?** |

As stated earlier, Jamaica’s new ILMS has not yet been implemented. Part of the reason behind choosing an off-the-shelf software system, is to avoid implementing a totally custom system with all the potential issues that brings (mainly substantially longer implementation time and cost). Naturally, we need to make sure the chosen ILMS can adhere (be customized) to the particulars of Jamaica, so some customization is to be expected – but the aim is to minimize this by choosing a system that is (mostly) ready straight out-of-the-box. Therefore, we do not expect the implementation to be either lengthy or complex.

Probably the most challenging aspect of getting a new ILMS is the change of mindset in order to take full advantage of the new processes/procedures and the new (and improved) functionality. It is imperative that all involved parties are included when the new processes are determined, and that everybody agrees and “signs up” to use the new processes – and then the functionality that is needed in order to implement these processes. This is where most projects struggle, the technical aspect is normally not the (largest) issues. Therefore, we will make sure we do the implementation in the most equitable and inclusive way we can.

We will, of course, be more than happy to share any and all of our experiences with Trinidad & Tobago once we have completed our selection and implementation.

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| 1. **What is the envisioned technology stack for the proposed upgraded system?** |

This is one of the main advantages by selecting a SaaS solution, we do not have to worry about the technology stack and can focus on the functionalities/requirements. In essence, we do not care what technology stack is being used as long as the provider can make sure that we get the performance (responsiveness), scalability (user/data growth), security (data protection, user privacy), maintainability (e.g., adding new features), and integration capabilities (e.g., integrating with the Jamaica Data Exchange) we need. Another very important aspect of the new ILMS is that it should be “mobile first”. Presently, “everybody” has a smart phone and all access to (almost) any application is through that smart phone. It is therefore more important that the mobile version of the application (be it iOS or Android) is as easy to use as possible than the desktop/web version. We anticipate that we will use quite a bit of time to test out the mobile version with representatives of different user groups to make sure we have an ILMS that “everybody” can and will use.

All our focus is therefore on functionality (or requirements) and not on the underlying technology.

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| 1. **What were the primary technical and functional considerations that informed the specifications of the proposed system?** |

We are presently in the process of determining the details of the functional requirements for our new ILMS. As stated above, our only considerations are the functionality of the new system and not the technology. Our primary functional considerations are

* Software-as-a-Service, off-the-shelf software: for the reasons mentioned above
* Matching based on skills/experience/etc.: to avoid relying on keyword matching so we can get a more precise matching between job seekers and job openings
* Automatic matching: AI-driven automatic matching is “always-on”; as soon as a job/resume becomes available (or when a job/resume is updated), the matching process is automatically run and matches are communicated to job seekers/employers
* Explainable match score: to explain why the system gave A a score of 78% and B a score of 67%; ideally it should also show how each requirement match with the resume (and vice versa), XAI and IAI (please see above)
* Gap analysis: for each requirement that was not a perfect match, it gives the job seeker a chance to see where her/his gaps are versus the job opening in question; ideally it should also match each skills gap (below a certain threshold) with a training course (or courses) for the job seeker to close the skills gap
* Ideally be able to match “across” languages: the ability to match a resume/job to a job/resume in a different language
* Parsing: the matching functionality above requires a high-precision parsing capability of both job openings and resumes to correctly “extract” the skills/education/background/etc.
  + Once parsed, the system must be able to normalize the extracted data to enable matching “apples to apples”
  + Once parsed, the system must be able to classify the extracted data according to different taxonomies/classifications such as e.g., National/Caribbean Vocational Qualification, ISCO, ESCO, O\*Net, etc.
* AI-driven chatbots for support: to ease the burden of ELE staff so they can spend more time on vulnerable job seekers and employers
* Resume/job opening creation assistance: probably based on templates to allow users to self-service
* Ability to store resources for employers and job seekers: allows us to create articles, advice, how-to’s, links, etc. to enable self-discovery by users to improve all aspects of a job/employee search
* Reporting tool: ideally have the ability to create custom/specialized reports based on all the available data
* Integration: the system must contain open, documented API to enable integration into required systems and into the JDE (Jamaica Data Exchange) when that becomes available
* Mobile-first: should work with 3G, 4G, and 5G
* High availability: 99.5% uptime requirement
* Performance: must be fast and responsive through the internet on all devices
* Scalability: must be able to handle increased loads and user growth
* Security: data protection and user privacy; must comply with Jamaica’s Data Protection Act, 2020, ideally also compliant with GDPR, EU act on AI, etc.; ideally certified in standards such as ISO 27001, SOC-2, etc.
* Maintainability: must be easy to add/modify/delete features

It is important to note that we understand it will cost time and money to maintain this system, even if we do not need to worry about the infrastructure management of the ILMS. Investing in an ILMS should last 10 to 20 years, and as time goes on, new features and functionality will become available. The system, and ELE, will need to be able to move with the times and so we can update the system to deliver the latest functionality. In addition, searching for jobs and employees will keep developing so we will need to be able to add articles, advice pertinent to job/employee search, how-to recipes, links to the latest articles/education/training/etc. All this means we have to set aside resources (people, money) to maintain the ILMS.

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| 1. **What specific strategies were effective in securing registration from employers for the LMIS?** |

To secure active and sustained registration from employers in the LMIS, multiple and proactive strategies could be implemented. Some countries around the world make it mandatory for employers to publish all job vacancies on the LMIS, on a non-exclusive basis, to ensure that the system becomes a standard part of employers’ recruitment processes without limiting their access to other channels. This requirement need to be supported by clear guidelines and a streamlined, user friendly, digital interface that allows employers to register, post vacancies, and manage applications with ease. It is crucial that the system adds value their recruitment process and is not seen as just ticking the box.

Additionally, many PESs deploy dedicated employer engagement officers who can provide direct support to businesses, particularly micro and small and medium-sized enterprises, to guide them through the registration process and demonstrate the value added of the LMIS.

In addition, the registration to LMIS in some countries is also linked to access to wage subsidies, or participation in government-supported employment programs, which can further encourage registration and regular use.

Finally, establishing partnerships with business associations and chambers of commerce can strengthen outreach efforts and help institutionalize the LMIS as a trusted and essential tool for recruitment and labour market planning.

Based on experience in other countries, it is imperative that the new ILMS provides functionality for employers that makes it worth their while to use the system. The system must not just be easy to use (although that is imperative, whether used through a smart phone or desktop/browser) but it also needs to provide functionality that makes it easier for employers to find new employees, create job openings, set up interviews, etc. If the employers get a better and more complete experience with Jamaica’s new ILMS than with other web sites (e.g., Caribbeanjobs.com, LinkedIn, etc.), they will choose the new ILMS, not because they “have to” but because they get better results/service.

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| 1. **Considering the fragmented nature of the T&T’s, what specific integration challenges have been identified, and how can we address them to create a seamless LMIS?** |

Every single country (and company for that matter) has different requirements and challenges when it comes to an ILMS. Jamaica has many of the same integration challenges as Trinidad & Tobago and we will be happy to share our experiences. What we are doing to be prepared for any type of integration challenge is to make sure the selected ILMS has standard-based, open, and documented APIs that will enable it to integrate into (almost) any system that is necessary. An advantage that Jamaica has over T&T is that we are in the latter stages of implementing the Jamaica Data Exchange, which will standardize integration between any governmental system and even private enterprise systems. Because of this, we can be more specific about the integration needs for the ILMS – it will have to be able to integrate into the JDE, rather than check each and every necessary governmental system. However, as long as T&T’s systems provide standard, up-to-date (or mostly up-to-date) integration points, choosing a system that has standardized, open APIs should address the integration efforts (although it can still be a lot of work).

We also realize that it will take time for systems such as the NIS (National Insurance Scheme), STATIN (Statistical Institute of Jamaica), etc. to integrate with the JDE. Which means that the new ILMS might have to directly integrate to some of these systems– at least temporarily. We will be more than happy to share our experiences once we have done some of these.

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| 1. **What are the best practices and experiences from the implementation team on maintaining stakeholder engagement?** 2. **Strategies for ensuring that all stakeholders, including employers and users, are adequately trained and prepared to use the LMIS effectively.** |

*Linked to both questions 8 and 9.*

Maintaining stakeholder engagement during the implementation of the new LMIS requires a structured and inclusive change management approach. Best practices highlight the importance of sustained communication, transparency, and co-creation throughout the change process. Given the scale of transformation involved, not only in introducing a digital system but also in redesigning business processes, it is essential that managers provide all staff and partners with a clear understanding of the purpose, rationale, and expected outcomes of the reform.

Stakeholder engagement should begin with identifying all those affected by or involved in the changes, ensuring that they are informed early, consulted meaningfully, and actively included in shaping solutions. This involves establishing regular coordination forums, feedback mechanisms, and working groups where diverse perspectives can be shared and incorporated. Engagement is not a one-time event but a continuous process, especially during times of institutional change, requiring both formal and informal channels to keep partners aligned and responsive.

Equally important is equipping all stakeholders, internal and external, with the tools, capacity-building opportunities, and support needed to adapt to the new system and processes. When stakeholders are invited to be part of the journey, rather than passive recipients of change, ownership and commitment grow. Ensuring that change processes are transparent, understandable, and responsive to feedback is fundamental to keeping all sides on board.

With respect to training on the new ILMS, the single most important thing is to make sure the ILMS is so easy to use that training is not really necessary – especially for use on a mobile device. Experience shows that when users have to go through training (either a training course or reading a manual) in order to use a system, user adoption falls. By making the new ILMS as intuitive as possible, we increase user adoption of the new system. Naturally, we do need to have training for people unfamiliar with modern mobile applications – the new ILMS is meant to be used by the entire population of Jamaica – and we will use two different methods. Rather than create training courses and manuals, we expect to create YouTube videos that explains/highlights how to use the different aspects of the ILMS. The current user population of mobile applications is used to turning to YouTube to find “how-to’s” and we need to meet the user population where they are. Also, we expect to create train-the-trainer programmes to make us less dependent on the ILMS provider. This way, we can always have trainers available even when people are away, sick, or leave the ELE.

**POTENTIAL CONTENT TO ADD ON TO THE NEXT SESSION**

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| 1. **Can you provide an overview of the AI algorithms currently employed in the LMIS and describe the system’s technology stack? A live technical demonstration would be appreciated.** |

Jamaica’s current LMIS is not using any AI algorithms; this is one of the reasons we are moving to a new system. Once we have chosen a provider, we can try to organize a live demonstration of their ILMS and you can ask any questions you want. We want to emphasize again that the technology stack of the new ILMS is not the focus, but rather the features and functionality of the system.

We are very aware that it is important that we understand the AI algorithms being used by the new ILMS, so that we can potentially change the algorithm to better fit Jamaica’s needs. (To be precise, it will be the supplier that makes the change according to our specifications as this will be a SaaS system). If, e.g., we see that the system is not correctly matching candidates and job openings, we will discuss the algorithm and reasons for the “discrepancy” and make any necessary changes. Likewise, sometimes we might want to do a “positive discrimination” and the system should be able to accommodate such requests. (“Positive discrimination” refers to instances when we want the system to give preferential treatment of individuals based on protected characteristics. Examples of such positive discrimination are hiring someone from a minority group, promoting a person with disability, giving preferential treatment to an older candidate, etc.).

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