Digital Transformation in Strategic Workforce Development

1. Problem: HR Practitioners Struggle with Workforce Development Today

HR practitioners today play a critical role in workforce development. Their responsibility is to ensure that the current pool of employees within the organization is well-developed to fulfill future leadership roles and adapt to the ever-evolving skills requirements of the modern workforce. Practically, this involves charting out the organization's long-term skills requirements vis-à-vis skill gaps in the existing workforce, and matching employees to appropriate developmental opportunities—such as projects, secondary appointments, secondary taskings, and courses—to meet these future needs.

However, on the ground, **HR practitioners often struggle to do this well**, as they are unable to manage the cognitive load, which involves optimizing the matching of the many developmental opportunities to each employee at the individual-level and organizational-level, and for all employees across the organization and across time. As such, in practice, the matching of developmental opportunities to employees is mostly done using basic filtering of employee data such as age, seniority, assessed potential and performance, as well as role. This results in the sub-optimal matching of developmental opportunities to employees, which results in subpar workforce development, and a workforce which is underprepared for future demands.

2. Solution: Strategic Workforce Development Platform

Our proposed solution is a Strategic Workforce Development Platform. **This platform will help to augment decision making for HR practitioners**, which will help them to better optimize the matching of developmental opportunities to employees, thus improving workforce development and ensuring that the workforce is prepared to meet future demands. In particular, the platform will provide AI-generated recommendations for developmental opportunities tailored to each employee throughout their career. This will be optimized both at the individual

level and the organization-level and will be based on the organization's long-term skills requirements vis-à-vis current skill gaps in the existing workforce.

3. Why Now, Market Size, Competitors and Target Audience

Admittedly, workforce development is not a new challenge. However, the **potential impact of subpar workforce development has grown exponentially**. According to Forbes, workplaces have changed more rapidly in the past three years than in the previous decades, while according to the World Economic Forum, 44% of workers' skills will be disrupted within the next five years. This implies that organisations are now at risk of having 44% of their workers rendered obsolete in five years without timely and appropriate workforce development, and thus it is opportune to develop this Workforce Development Platform.

This also implies that the **market size for this Workforce Development Platform is substantial and has considerable scope for growth**. According to DataBridge Market Research and Verified Market Research, the TAM for global workforce development is currently at USD 70 Billion with a 10% CAGR. Based on the World Economic Forum data, the SAM can then be assessed to constitute 44% of the TAM, at USD 31 Billion. The SOM, based on a 5% market penetration rate, would then be USD 1.55 Billion with the same 10% CAGR.

Given that workforce development is not a new challenge, this is not the first available solution in the market. However, there are **three ways in which our Workforce Development Platform will be differentiated from its existing competitors**. First, it will go beyond providing insights through dashboards, which is the focus of ERP systems by SAP and Oracle, to also provide recommendations. Second, it will go beyond optimizing development at the individual level, which is the focus of Future Fit AI, to also optimize development at the organization level. Third, it will go beyond tactical improvements in training, which is the focus of LearnExperts, to also drive strategic shifts in workforce development.

4. Network Effects and Economies of Scope

To grow economies of scope, we will focus on network effects in two key areas. First, the onboarding of **all relevant stakeholders – HR practitioners, employees, managers, senior leadership, policy and finance departments**. Second, the building of a strong **database of the skillsets that each employee possesses matched against the organizational needs**.

These would be achieved through the following features. For **accessibility**, the platform will have a simple user interface and be internet-enabled, with each employee having a unique login key. It will also provide real-time notifications. For **engagement**, the platform will have shared dashboards of the current workforce skill levels and budget projections for HR practitioners, senior leadership, and policy and finance departments, as well as individual employee skill profiles and an overview of projected developmental opportunities for employees and managers. It will also have gamification elements, such as progress tracking and skill achievement badges, to incentivize continuous platform usage among employees. Additionally, it will capture user feedback through in-platform surveys to iteratively refine features and enhance user satisfaction.

For **collaboration**, the platform will allow HR practitioners, managers and senior leadership to work together to refine the developmental opportunities for each employee, by exchanging their views on each employee's developmental progress. It will also allow stakeholders to collaborate on the administrative process: HR practitioners can post their proposed developmental opportunities for each employee, and thereafter (a) employees can indicate their availability; (b) managers can specify their support; (c) senior leadership can express their approval; and (d) policy and finance departments can approve their funding. More than that, the platform will be used for day-to-day administrative functions by facilitating all other administrative matters, be it in the submission of forms, claims or declarations.

For **personalization**, the platform will allow employees to view and assess their own skill levels as well as to articulate their developmental goals. This will allow the platform to

provide additional suggestions on developmental opportunities that they could explore, beyond their projected developmental opportunities. For **connection**, the platform will include a mentorship site where employees can search for mentors, and where managers can be engaged as mentors. The platform will also include a development advisory function where employees can raise queries with the relevant stakeholders.

Combined, these could facilitate economies of scope in two areas. First, the platform could be used for **employee deployment** by facilitating the decision of which roles each employee should be rotated to based on the job scope of each role matched against the skill level of each employee. Second, the platform could be used for **employee assessment and appraisal** by facilitating the evaluation of the potential and performance of each employee based on the progress and application of their skills, and sharing of the feedback with them.

5. Development, Implementation and Risks

The key challenge for the development of the Workforce Development Platform will be the shift in the approach in workforce development from using basic employee data to match developmental opportunities to employees, to using a skills-based approach. Nonetheless, this can be developed in four phases. The first phase will focus on **developing a skills framework**, which will measure each employee's skill level through past appointments and training. The second phase will **consolidate, clean and structure historical data** on the developmental opportunities that each employee has been matched to in the past. The data will include the employee data used in the considerations for nominations at the point in time. Importantly, the skills framework will be superimposed on each employee to provide an assessment of each employee's skill level at the point of matching, and data annotation will be applied to retrospectively assess whether the developmental opportunity was appropriate based on the skill level of each employee at the point of matching. The third phase will **train the AI using a Random Forest model**. The fourth phase will **build the front-end application**.

The development process will also ensure that the **key risks of inaccurate AI outputs, discrimination in recommendations, and data privacy concerns are mitigated**. Inaccurate outputs, which could lead to wrong matching of developmental opportunities, will be addressed through rigorous AI training, human oversight, and refinement. To prevent bias and systemic discrimination, ethical AI protocols, bias audits, and compliance with diversity standards will be implemented, with manual oversight as a contingency. Data privacy risks, stemming from the consolidation of sensitive HR data, will be mitigated through robust encryption, access controls, and governance protocols, with regular backups and a recovery plan ensuring continuity in case of breaches.

Our go-to-market strategy will first target **organisations which are constrained to rely more on internal employee development with limited ability to leverage external recruitment to fulfil skills gaps**. The military is the prime target audience, where senior commanders cannot be simply recruited, but have to be developed internally. Government agencies will also be a target audience, as they can only recruit local citizens and have difficulties laying off redundant employees. **Organisations for which the skills requirements are changing most rapidly will also be targeted**, such as companies in the technology and healthcare sectors. These are the organisations with the highest risk of having a redundant workforce, and thus will reap the greatest benefits.

We expect two key challenges in implementation, namely adoption and integration. For adoption, we will **commence with the HR departments**, who will benefit the most in terms of their reduced workload. From there, **employees will be compelled to also use the platform**, while senior leadership, managers as well as policy and finance departments will be gradually onboarded through the network effects. For integration, we will focus on building a platform separate from existing ERP systems, while **allowing data from the ERP systems to be transferred and used in real time**.

6. Business Model, Cost-Benefit Analysis and Financials

We will charge a 1% fee for each percentage point of productivity gains of an employee, which is pegged to the level that an employee's skill level improves through the matching of developmental opportunities. This will align incentives and allow each organization to have a direct cost-benefit comparison for the usage of the platform. It will also ensure that the platform would appeal not only to large organisations but will also be accessible by smaller organisations such as SMEs. Broadly, using an average annual salary of $70,000 and an average job tenure of 4 years, a 1% improvement in employee skill level would result in an increase in productivity worth $2,800, and a fee of $28 for this average employee would be reasonable. This is especially given that there are other intangible benefits of improved development, such as employee retention, which reduces recruitment and retraining costs.

Conservatively assuming a 10% market penetration rate in Singapore, and an average 5% increase in skill level per employee, **our total annual revenue would be SGD 56 Million**. In the future, the platform's revenue streams could grow through partnerships with external training providers and premium analytics features for advanced workforce planning. Collectively, these outweigh the required start-up costs, estimated at SGD 2 Million, and the annual operational costs, estimated at SGD 2 Million. This would also allow AI retraining, platform upgrades, and customer support to ensure the platform remains scalable and effective. As more users engage with the platform, the growing data pool will enhance the accuracy of AI recommendations, creating a virtuous cycle of value creation.

7. Conclusion

With this, the Workforce Development Platform will enhance workforce development, thus improving productivity and aligning employee growth with organizational goals. Most importantly, it will ensure that the organisation's workforce is future-ready in meeting the demands of this fast-evolving world.