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Using AI for skills anticipation and planning

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World Development Report 2019, World Bank "The most significant investments that people, firms, and governments can make in the changing nature of work are in enhancing human capital."



Changing Talent Landscape

More pronounced changes to ensue in the new decade

McKinsey & Company

11 DEC 2012

72% of Education Providers Believe That Their Graduates are Ready For Work But Less Than Half of Students and Employers Agree



START OF THE DECADE

BUSINESS INSIDER SINGAPORE

18 JUN 2019

3 in 4 Singaporeans say they weren't taught enough skills to excel at work – and millennials feel the worst prepared



END OF THE DECADE



THE NEXT DECADE



Conventional Approach: Slow and Unfocused



Conventional Methods of Skills Demand Assessment



Direct Industry Consultation

- Not standardized
- Slow
- Small sample
- Subjective



Surveys and Focus Groups

- Not skills-based
- Slow
- Expensive
- Outdated quickly



Skills Frameworks

- Not real-time
- Expensive
- Outdated quickly
- Hard to harmonise across industries



Rethinking skills anticipation and planning



Taking an Al-Driven Approach

Embracing technology in Human Capital Development



Tech-driven Approach: Real-time, Agile and Targeted



Big Data Analytics to decode **employer demand** and predict **future skill requirements**



Intelligent skill-gap analysis and personalised digital career guidance



Automatic mapping of curriculum to **granular skills** and **modular education** for youth and adults



Reinventing the Future of Workforce with Data-Driven Insights



Data Mining

Indexing data from multiple sources



Statistical Analysis

Data cleansing and relational extraction



Predictive Modelling

Customized model based on required context

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Regional Market Insights – Top 20 Job Titles by Demand (for IT sector)



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Job Titles (Normalised Scores)

Source: ADB – JobKred – Bangladesh Research

Regional Market Insights – Top 20 Skills by Demand (for IT Sector)



Source: ADB – JobKred – Bangladesh Research

Information Technology



Job Demand by Industry

Top 10 Skills for Software Engineer

01	Software Development
02	Software Engineering
03	Agile Methodologies
04	Web Services
05	Web Applications
06	Programming
07	Subversion
08	Distributed Systems
09	Algorithms
10	Scrum

Top 10 Skills for Web Developer

01	Web Development
02	Web Applications
03	Software Development
04	Web Design
05	Agile Methodologies
06	Subversion
07	Databases
08	MVC
09	Web Services
10	User Experience

Top 10 Skills for iOS Developer

01	Objective-C
02	iOS Development
03	Xcode
04	Mobile Applications
05	Software Development
06	Subversion
07	Web Development
08	OOP
09	Web Services
10	Mobile Devices



BACKGROUND OF WORKFORCE TRANSFORMATION

In the ever-changing world of work, it is critical to ensure that the skills supply of the working population matches the skills demand of the industry

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The key challenges are to effectively identify current industry skills demand, then

personalize training and career

recommendations to each individual student
or working adult, to help close skills gaps and land high quality jobs By adapting suitable technology, experts, training providers and practices in Education and Workforce Transformation, developing countries can leapfrog past certain steps to ensure their students and citizens are futureready for Industry 4.0



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Case Studies



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LMI SKILLS DEMAND RESEARCH

With the ever-changing future of work, new methodologies are needed to understand, in real-time, the skills demand of the country. Traditionally, surveys, interviews and focus groups would be conducted with stakeholders in the labour market, such as employers and industry associations. The results are then compiled into a report to inform policy makers. This normally takes years of work, and is a very expensive and tedious process for all parties involved.

CASE STUDY: MYANMAR LABOUR MARKET ANALYSIS

HOW IT WORKS



JobKred collaborated with JobNet, a Burmese job portal, for local data collection of key sectors and job titles for analysis. Data cleansing then took place in order to obtain most in-demand job roles and skills requirements in Myanmar, and they were mapped using JobKred's taxonomies. Data analysis was then conducted to identify high-demand job titles and sectors, and to obtain changes and trends.



Data collection Data Cleansing Data Analysis

JOBKRED'S VALUE TO MYANMAR'S LABOUR MARKET RESEARCH

JobKred's AI is trained by millions of data points from online data sources, user profiles, job postings, social media, government sources, etc. Using big data, data science and predictive analytics, data can be used to identify high-demand/high growth sectors and occupations, examine demand for key skills and benchmark local labour market intelligence against global labour market information. Over 20,000 data points were collected and cleaned up before information regarding employer demand for labour and and skills relevant to the job titles were obtained. Data was cleaned and processed into a report within a few weeks, rather than across multiple months in traditional labour market research.

PARTNERS

Consultancies such as EY and PwC can complement JobKred's big data analysis with traditional surveys, focus groups and interviews, as well as conduct consultancy sessions with policy makers to make sense of the data.





TEACHER TRAINING

Once the curriculum is adapted to suit the needs of students, the staff who teach the curriculum also have to be trained in order to deliver the curriculum effectively.

Countries may have to train thousands of teachers across a large geographical area, and ensure that training needs is done for each teacher, the right training interventions are pushed to the teacher, and track the competency and capabilities for all teachers. This is expensive and time consuming, thus curriculum changes tended to be slow to push out, and teachers slow to learn and adopt changes, leading to students not being able to benefit.

CASE STUDY: WORLD BANK PROJECT - NIGERIA

HOW IT WORKS



Using our AI workforce development platform, JobKred is able to help Nigerian universities to modernize their entire competency and training framework for academic and non-academic staff. Implementation is also easy for the school, with the AI taking care of skills gap analysis, training recommendations and training delivery, so that the school could transform their students quickly and easily.





Skills Gap Analysis Reco

Training Training Delivery Recommendations Nationwide

JOBKRED'S VALUE TO TEACHER TRAINING

JobKred is able to change the status quo in the maintenance of curriculums for educational institutes, and ensure easy implementation of curriculum updates and course recommendations to students.

Al powers recommendations for careers, courses and micro-learning. Students can now craft their own personalised learning journey and ensure their skills match current labour market demands. For example, students will be able to select modules that are more relevant for them to pursue a certain career in the future





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YEM Capacity-Building & Planning Session on Skills Anticipation, Jan 2020

