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METAVERSE AND E-LEARNING AT REDBUS: CHALLENGES AND BENEFITS

Prabhanjan Kulkarni, Vice President, Human Resources at RedBus, received a standing applause from the HR community at the annual National Human Resource Development[1] (NHRD) conclave in February 2023. While appreciating the redBus HR team for leveraging emerging technologies for new possibilities,[2] a focus track of the conference, many Chief Human Resource Officers (CHROs) and Learning & Development (L&D) leaders had posed multiple thought-provoking questions about the learning initiatives implemented at redBus. Although the business impacts were clearly visible, Kulkarni was challenged by one CHRO to demonstrate productivity improvement through this learning. Responding to this query, Kulkarni expressed:

> I can share all input metrics such as app downloads, courses taken, learning plans generated, hours of learning done, improvement in scores, and the number of tests for various coding languages available and utilized. However, it may be difficult for any learning function to link to outcomes directly, and we should refrain from that expectation. Productivity may be a function of many more parameters, and establishing causality from training is a big stretch.

Another L&D head wondered if user engagement would be better in strengthening the learning, had redBus made their metaverse environment (called the redVerse) wholly interactive, with avatars for users and employees engaging in the meta environment.

Kulkarni continued to reflect on the questions raised after his presentation. Turning to Srijeet Sarkar, Associate Director of HR at redBus and Product Manager for the technology-enabled L&D platform (called redLearn), he asked:

> Learning was already a strength, happening inorganically, even without redVerse and redLearn as a whole application coming to the foreground. Pushing learning in an aggressive way may kill our learning culture. Also, if we increase our investment in the Meta platform, say for collaboration, are we likely to kill the high level of in-person collaboration and relationships, which is a key strength driving our innovation and learning? How should we balance this? How long and how much will we need to continue to invest, as technologies and platforms are rapidly changing? Should we rethink the LMS strategy?

ORGANIZATION CONTEXT

redBus was an unlisted private online bus ticketing platform. Incorporated in 2006, it became the world's largest online bus ticketing platform[3] with operating revenues exceeding USD 5 billion (INR 500 crores) in 2022.[4] The

[1] https://nationalhrd.org/home last accessed on April 5, 2023.
[2] https://nationalhrd.org/conference last accessed on April 4, 2023.
[3] https://www.redbus.in/info/aboutus and https://www.semrush.com/website/redbus.in/competitors/ last accessed on July 29, 2023.
[4] https://www.tofler.in/redbus-india-private-limited/company/U72900HR2012PTC090199 last accessed on July 29, 2023.

Debolina Dutta, Professor of Practice, OB & HR, IIM Bangalore prepared this case for class discussion. The company cooperated and provided information to IIMB in connection with preparing this case. No funding was received from redBus for the development of this case. Some of the names of individuals have been anonymized. The case was reviewed and approved before publication by a company designate. This case is not intended to serve as an endorsement, source of primary data, or to show effective or inefficient handling of decisions or business processes.

company had its operations in six countries: India, Malaysia, Singapore, Indonesia, Peru, and Colombia. Besides bus ticketing, redBus also had two other divisions: redRail (offering train ticketing and information service) and rYde (providing intercity and airport cab rental services). Through its web and mobile apps, redBus aggregated bus services from approximately 4,000 bus operators, connected 300,000 distinct routes and 150,000+ live routes, and transacted approximately 250,000 bus seats daily, hosting the largest inventory of bus seats from private bus operators and state road transport corporations.

The firm had about 1000 permanent employees, of which nearly 800 were based out of their Bangalore headquarters, and over 400 employees working in the technology, product, and design divisions (**Exhibit 1**). Specific lines of business (LOBs) catered to geographical markets to address the various customer needs. These included Bus India (bus), redRail (train), Bus International (Peru, Colombia, Indonesia, Singapore, Malaysia, Vietnam), rYde (cab) and the various technology stacks. For instance, many technology teams had to collaborate to make a product offering available on multiple platforms, such as the desktop/web, iOS, and Android channels. This required regular cross-functional sprints, which the high-energy, collaborative work environment and culture OF redBus enabled.

Talking about the impact of the lockdown on this collaboration challenge, Sarkar shared:

> A physical interaction only works best for us in an environment where no hybrid was available, and everybody was back in the office. We were interacting and whiteboarding ideas together. I don't think we will return to normalcy, where everybody is in the office simultaneously. Also, geographical differences become a reality in any expanding business, even if COVID is not an issue. How do you ensure that everybody is available and coming and interacting with each other simultaneously but without the digital overload and fatigue of Zoom meetings? The COVID scenario only accentuated the need and has proven that this is the right fit for the right context right now.

ACCELERATING DIGITAL AND ASYNCHRONOUS LEARNING VIA redLearn

In 2019, redBus engaged an external consultant to determine their culture's employee value proposition and dominant strengths. The four key strengths that emerged were: Non-Stop Learning, Putting People in the Driver's Seat (Empowerment), Support, and Ability to Create Impact. Kulkarni wanted to communicate these four strengths in easy and memorable terms for all employees. The phrase "Better You Everyday" became popular to symbolize continuous learning, accountability, and individual ownership of growth, learning, and careers.

In 2020, redBus's existing e-learning ecosystem, which was a group-level enterprise learning and upskilling platform,[5] and a learning management system (LMS), was used to deliver online learning experiences to employees across the group. Even though employees had access to the LMS, utilization was fairly low. Licenses to access the platform were allocated dynamically, depending on the learner's need, utilization, etc. Further, the content available was not wholly relevant, with basic level learning provided by the courses. Kulkarni added, "If we wanted our learners to get advance knowledge on any specific technology, such as Golang or Erlang, with which 3-4 core engineering teams work, only basic level courses were accessible at times."

The age-old LMS platforms had curated content, sometimes co-developed with the organization, to customize learning needs, with content copyrighted for the specific organization. These were popular in large-size organizations and required deep investments in adoption. The development of the new context was slow and painstaking for organizations that invested in their personalized LMS. The new age cloud-based LMS platforms offered a wider variety of learning content on a pay-per-use or licensed model, which allowed higher access to content but was not specific or customized to the organization.

[5] https://disprz.com/ last accessed on April 3, 2023.

Sarkar (annual cost to company INR 4 million), Manoj Kumar, Senior Director, Data Engineering at redBus (annual cost to company INR 4.5 million), and a group of 3 other software engineering interns formed a team to develop a low-cost, impactful learning solution—redLearn—that catered to all learning needs. The entire product resulted from a makeathon at redBus, where a group of employees competed to solve business problems and productivity challenges. The cost of hiring the interns was INR 25,000 per month, and they were actively involved in developing the platform for over 3 months. Kumar and Sarkar oversaw the development, with approximately 5% and 15% of their individual time, respectively, utilized for the project. It included the meta-based learning module of redVerse under its umbrella to solve Kulkarni's problem on LMS platforms. Prakash Sangam, Chief Executive Officer (CEO) of redBus, found merit in the proposal by the team and sponsored the development of the in-house LMS platform, which was subsequently named redLearn (see **Exhibit 3**).

Prior to the makeathon, in May 2022, Kulkarni explained the need for creating a customized LMS for redBus:

> Given the deep level of platform and technology context requirements, these existing systems would help us solve a gap in learning a new technology or language. Application and learning of the internal systems and platforms that use this technology remained a gap. For example, Swift, the programming language used for writing Apple phone-compatible software, is readily available. For us, we needed an understanding of the redBus platform so that new feature development for Apple phones could be developed. Content for this is not available externally. We needed a platform that would help assess the expertise required for integrated system development involving multiple programming languages (see **Exhibit 2**). There is always a balance required between the high cost of customization and the return on investment (ROI) we can expect in terms of utilization and business impact of the learning.

redLearn was launched in September 2022, with applications developed for Android and iPhone mobile usage as well. It served as a single gateway for redVerse and redLearn. It also acted as a knowledge management repository, where all employee-relevant resources were available in document and audio formats. Sarkar was happy to note the increase in app downloads for redLearn, with 114 downloads for iOS devices (see **Exhibit 4**) and 342 downloads for Android phones and laptop systems. The platform was conceptualized for the engineering team and had seen 100% adoption. Sarkar was keen on developing a similar learning ecosystem for the other support functions linked to the competency model.

The redLearn app offered technology upskilling customized to specific business unit requirements. The platform curated specialized individual learning plans according to the improvement areas/tech stacks highlighted in the assessment analytics. The emerging learning plan comprised free courses (**Exhibit 5**) that could be taken to bridge the skill gaps. For instance, the Quality Assurance team, responsible for testing product functionalities created by the development teams, required software engineers to have specific competencies (see **Exhibit 6**). Therefore, applicants for the specific teams were assessed on the multiple competencies during selection, promotion, and internal mobility. Assessment could be done via multiple choice questions of varying difficulty levels or through coding tests (see **Exhibit 7**). Python[6] was used to script machine learning algorithms, build data pipelines, and generate multiple-choice questions. The machine learning model at the backend generated and compiled relevant questions of varying difficulty levels and boasted a repository of over 15000 questions.

As an emerging feature development initiative, the redLearn backend team started exploring how to embed chatGPT to increase the existing repository of questions. SQL was used to manage the data queries, and distributed computing tools like Apache Kafka and Storm[7] were incorporated. For the coding questions, problem sets were obtained from the various team managers and subject matter experts and presented for the assessee to write. The compilation of the code was instantly available on test completion, which determined the errors and scoring for the specific skill. The platform generated a report indicating strengths and improvement areas of a particular technology (see **Exhibit 8**). Based on the improvement areas, the platform also immediately suggested free learning courses

[6] Python is a popular programming language: https://www.python.org/ last accessed on July 29, 2023.

[7] Apache Kafka handles a large amount of data in a fraction of a second. It is a distributed message broker which relies on topics and partitions. Apache Storm is a fault-tolerant, distributed framework for real-time computation and processing of data streams.

that helped employees bridge the specific gap. Employees were also able to check their before-after scores (see **Exhibit 9**). The HR business partners accessed the assessment data to make informed choices in developing individual development plans (IDPs) and managing employee career progressions within the firm. Employees could voluntarily share their assessment scores and learning plans with their managers to initiate meaningful career development conversations.

Enthused by the success of redLearn, Anoop Menon, Chief Technology Officer (CTO) at redBus, announced that all redBus employees had to choose and complete a self-assessment on the technology(ies)/skill(s) of their choice using redLearn. Based on the performance outcome, learning plans were to be mandatorily shared with their managers and integrated into their career growth plans. With the enhanced utility of redLearn, as compared to the commercially available LMS, Kulkarni was able to reduce the annual license cost of INR 3.5 million for an external LMS and substitute it wholly with the internally developed redLearn platform/app.

Sarkar also used redLearn to assess the technical skills of a new batch of 48 engineering trainees who had joined redBus. Based on the emerging strength of each new hire, the trainees were assigned roles in the various teams (see **Exhibit 10**). Talent mapping of campus hires to their respective engineering teams was conducted based on the analysis of freely available psychometric test outcomes and individuals' pre- & post-technology assessment scores, all of which were obtained through the skill assessment feature of the redLearn app. There was no additional cost for these external assessments such as measuring Locus of Control, Johari Window, etc., apart from enabling their access through the platform. This helped establish clear behavioral and skill benchmarks of recruited hires, thereby facilitating correct team allocation and productive skill utilization. In fact, redBus was able to save INR 0.12 million, which was earlier incurred for conducting assessments as part of the campus recruitment process and INR 0.2 million per month for lateral hiring assessment, with an average of 20 hires per month. The redBus HR did not account for individual aspirations on technology platforms at this stage. Explaining the rationale, Kulkarni stated:

> It is important for the new trainees to get productive, engage, and assimilate with the organization quickly. This is better when they see they are quickly creating impact and contributing. The competency framework also helps their self-assessment for other technology skills. Once they upskill sufficiently, we encourage internal mobility to the teams of their choice.

The redLearn platform was a new development and was constantly being upgraded as technology evolved. A periodic review of the organization's current and future technology capabilities was conducted. This health index and internal and external talent availability provided inputs to the L&D team to curate new technology upskilling features for redLearn. Sarkar and the team continued to examine opportunities to improve the functionality of redVerse. For instance, ChatGPT was used to change the pattern of questions and repeatability to broaden the assessment base. Further, business leaders' inputs were also periodically solicited to ensure a proactive approach to supporting the technology and business requirement.

METAVERSE FOR NEW HIRE INDUCTION

At redBus, the COVID-19 pandemic and a remote working environment were the first instigators that led to developing the redVerse module within redLearn as a step to virtually induct people. With employees joining remotely, most of them only understood the functioning of their small teams. This posed a challenge for the organization, as most product feature development required significant cross-team collaboration. A lack of understanding of other teams delayed projects, impacting productivity. Typical of many IT organizations, attrition and business expansion at redBus led to annual hiring of 110-150 employees. Within three months, the redLearn application and its redVerse module were developed and implemented in its initial version. Post the pandemic, as employees returned to office, it was used to ensure seamless integration and onboarding of new employees, while existing employees found an opportunity to upskill and excel by leveraging the redLearn platform. Kumar summarized:

> Overall, the engineering teams comprise 37 smaller departments, which we refer to as tracks such as Omega (order inventory team), Capi (Central API), etc. I am responsible for four departments, DP (Dynamic Pricing), redProwin (bus operator analytics), Perz (user customization and personalization), and CLM (Customer Life Cycle Management). Most of our new hires would join, go through a boring 100-page document, sit through some PPTs, and forget all of it as they stepped out of the induction room. It was important to increase the understanding of the deeply knitted architecture of each team and our way of working for quick productivity of the new joinees. This is where meta-based learning brings it alive. Additionally, we freed up leadership bandwidth, which was required to acquaint new hires to the various teams, explain the architecture of the redBus platform, etc. New hires can now revisit specific aspects of the induction to better understand things they need more clarity on. The metaverse is always there with them and serves as a ready refresher.

The assisted virtual reality (VR) content offered by redVerse clearly distinguished itself from the real world. A 3-D interface provided increased realism, but service continuity was a drawback, and high-performance hardware was required to bridge this limitation. On the other hand, a fused environment combined the advantages of both approaches, including virtual approaches for creating new worlds and augmented approaches that included virtual elements. In addition, head-mounted devices (HMDs) provided a VR experience in which users were removed from the real world and experienced high levels of telepresence, supported by multiple degrees of freedom, features for multiple senses, and high-quality content. redBus procured 6 HMDs (Oculus Headsets) at a cost of INR 30,000 per device. This dependency on HMDs at redBus was neutralized by ensuring that the metaverse was available across mobile channels (both Android and iOS). Kumar laughingly added:

> Iron Man's interaction with J.A.R.V.I.S,[8] the AI that created the augmented reality and helped co-create the Iron Man suit, inspired me for what we wanted with our metaverse. I wanted a 3-D immersive experience for our new hires, allowing them to "see" the integrated nature of our architecture and business. redVerse is not J.A.R.V.I.S, but I think we achieved our objective from what we intended it to be.

During the pandemic, the redVerse module on the redLearn application provided a 360-degree view of the office on mobile handsets, allowing employees to take virtual tours of their office space, organizational structure, and technology teams from the comfort of their homes. The 360-degree view was transformed into an immersive 3D virtual world with a redBus virtual office (see **Exhibit 11**) and city tours and the redVerse City (see **Exhibits 12a** and **12b**), called redCity, which could be experienced by new hires on joining redBus, through the Oculus HMDs as well. The immersive VR showed key function heads and technology leaders seated in the office, which was an exact replica of the office space. Talking about the development, Sarkar conveyed:

> The idea for the immersive experience came from a need to create something cutting edge, during the makeathon, as a productivity hack. Once the makeathon was over, we hired three interns and decided to complete the project end to end. We did not have to hire experienced and very expensive talent from the market. These interns learned the technology and delivered the project for us at a fraction of the cost, compared to getting this done externally.

The Unity[9] Gaming engine, written in C#, was used to build the metaverse learning platform. The license cost of Unity was annually INR 0.3 million. Blender[10] was used to create digital assets that were then polished further. Light Detection and Ranging[11] (LiDar) was used to scan people and real-time objects. Additionally, a combination of Oculus-based technology—Kotlin, Swift UI, and Android Studio—was utilized to create a variety of modalities that represented the metaverse data.

[8] https://ironman.fandom.com/wiki/J.A.R.V.I.S. last accessed on April 4, 2023
[9] https://unity.com/ last accessed on July 28, 2023
[10] Blender is a free and open-source 3D computer graphics software tool set for creating animated films, visual effects, art, 3D-printed models, motion graphics, interactive 3D applications, virtual reality, and video games.
[11] Light Detection and Ranging is a remote sensing technology that uses laser light to collect measurements.

Moving traffic, a bus for driving through the city, and buildings were included in the experiential redCity design. At the redCity, each building represented a technology or engineering team. The participants could explore each building by entering the main door, which took them to an auditorium where the architectural notes of that engineering team were displayed. Audio and visual representations of the architecture in bite-sized learning modules also explained what the team does and how it was built. By facilitating self-paced familiarization with the redBus ecosystem and assisting new and experienced employees to better comprehend the intricate heat map of the microservices-based architectural setup, the metaverse, as a module within redLearn, was constructed to simplify the onboarding and training procedures. By making the learning process bite-sized and self-paced, one could understand the workings of each team upon entering each building through comprehensive notes and voice recordings. The managerial manhours saved through the metaverse-based induction were estimated to be INR 5.3 million, which included productive development manhours accrued.

Sandeep Pillai, a Software Engineer, who had supported the development of redVerse, talked about the challenge of making the platform wholly immersive:

> While we would have liked to incorporate avatars that engaged with the users, we did not have the required studio animation skills to make dynamic and responsive avatars. We provided fun interactive features, such as flying across redCity and riding a bus in the city, which increased user engagement. Further, given the scope and intent, we felt that a partially immersive meta experience would serve our meta-based induction's desired objective and intent.

Justifying the limited immersive experience of redVerse, Anoop Menon, the CTO, emphasized:

> Are we looking at the metaverse to replace human interaction? Absolutely not! We have seen that the quality of interaction, organization commitment, socialization, etc. took a hit during virtual working during the COVID times. As soon as restrictions were lifted, we were all 100% back in the office, albeit in hybrid mode! Further, we needed validation of our technical capabilities through this use case to assess what else we could offer from a customer engagement perspective. We are considering interactive gaming now for our consumers but may build that later. However, I know now that we can easily do it.

The new millennial and centennial hires experiencing the meta-induction were completely overwhelmed by the experience. A fresh engineering graduate stated:

> I had heard about meta but not experienced it. I never thought that a tourism technology marketplace firm would have such advanced technology in place for its customers and employees. It reassures me that I will be working on cutting-edge technology here. After telling them about all the technologies I could learn and work on, my friends also wanted to work here.

However, some Gen-X new hires expressed discomfort with the Oculus lens and the wholly immersive meta experience:

> Using the headset was an interesting experience. However, after 10 minutes, I felt dizzy and nauseous. Give me the web version of the induction any day! Maybe this technology is OK for kids who are used to gaming; it's not something for me. I would prefer to chat with the different function heads over coffee and get to understand them and their work better. This virtual stuff — it's extremely impersonal.

To cater to the diverse consumer base of the metaverse at redBus, redVerse was made accessible over multiple platforms, including Android and iOS mobile devices beyond Oculus. redVerse and redLearn were clearly adding value but needed constant investment to keep the learning repository relevant.

DECISION DILEMMAS

Sangam and Menon felicitated the HR team in the monthly town hall in March 2023, recognizing Kulkarni and Sarkar's efforts and contributions to strengthening the learning culture at redBus. Employees started trickling out at the end of the individual and team R&R ceremonies and monthly organizational updates.

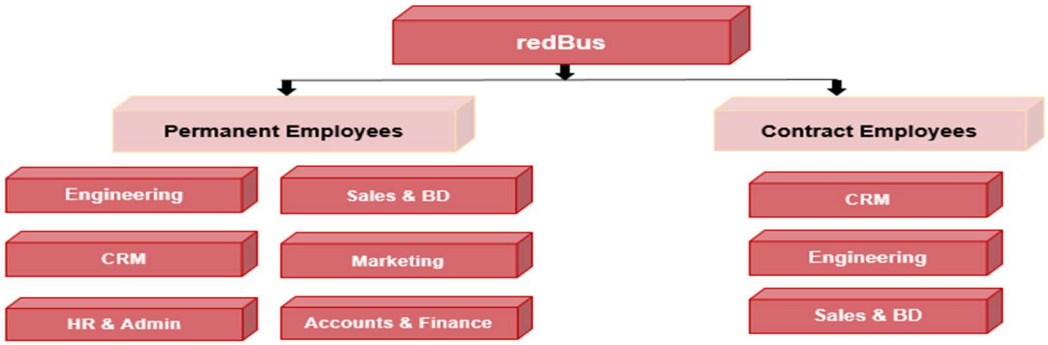
Kulkarni continued his discussion with Sangam and Menon, sharing some of the questions raised at the NHRD conference:

> Non-stop learning has emerged as a value proposition for redBus. However, to sustain the LMS's traction, we must continue to invest in building learning and assessment mechanisms for new and emerging technology skills. Srijeet is also keen that we extend the LMS to non-technical skills and competencies and map our entire workforce. However, if you ask me, it may be difficult for us to quantify these investments' immediate productivity and impact measures.

Sangam and Menon believed that the investments were justified. Anurag Jalori, the Chief Financial Officer (CFO) for redBus commented, "Now that you have embarked on this dynamic in-house learning platform, you are riding a tiger! How long will you continue investing as technologies and platforms change rapidly? Should we rethink redVerse and redLearn's in-house LMS strategy?"

Exhibit 1

redBus Organization Structure



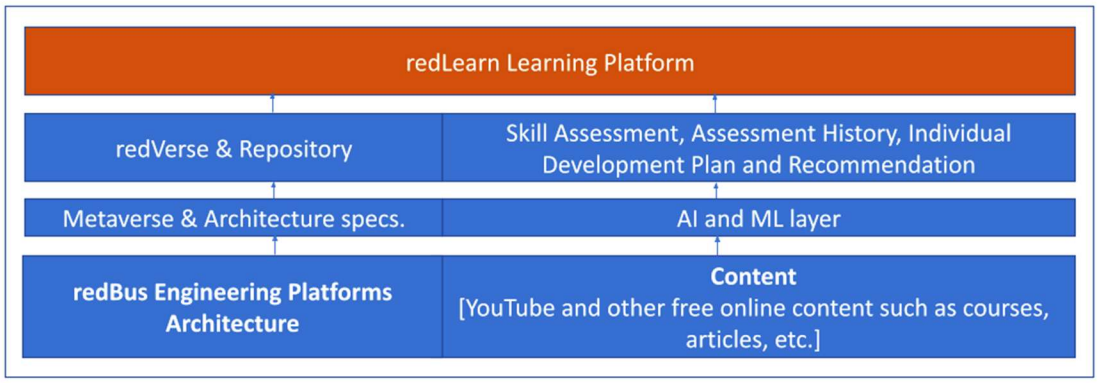
redBus Headcount - 985		
Departments	Permanent Employees HC- 918	Contract Employees HC- 67
Engineering	400	21
Sales & BD	250	25
CRM	100	100
Marketing	69	-
HR & Admin	30	-
Finance & Accounts	69	-

ENGINEERING Headcount- 400	
FRONT END	
Android / iOS	60
Web / MobWeb	30
White Label	30
Central API - 60	
CRM / CX - 70	
BACK END	
Inventory Platform	50
Payment Platform	50
Order Management Platform	50

Source: Company-provided documents

Exhibit 2

redLearn Architecture



Source: Company-provided documents

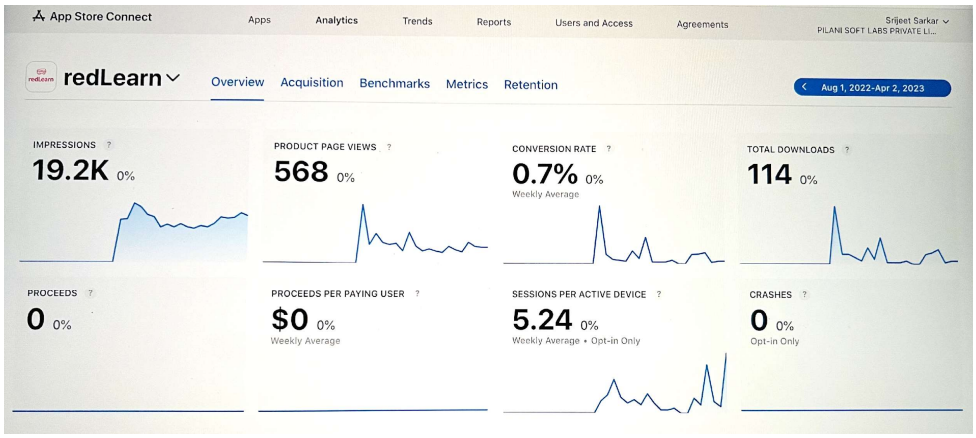
Exhibit 3

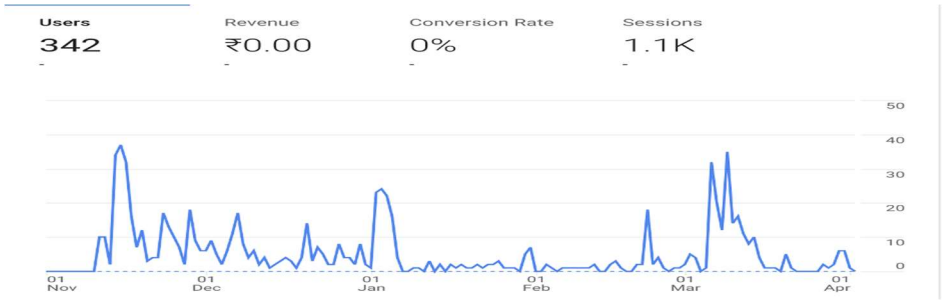
redLearn App View

Source: Company-provided documents

Exhibit 4

redLearn Google Analytics Report for IOS and Android devices

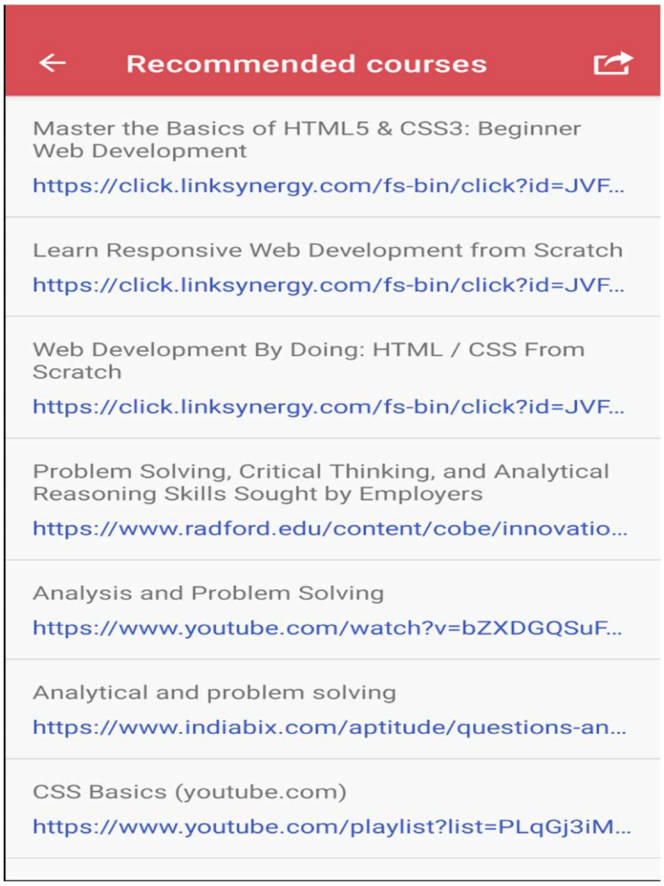




Source: Company-provided documents

Exhibit 5

redLearn Free Online Learnings



Source: Company-provided documents

Exhibit 6

Competency Specification for Quality Assurance Team

Sr. QA Engineer

Parameters	Core Skills	Proficiency Level Required - Basic/Intermediate/Expert	What needs to be known	Important Competencies
Job/Functional Knowledge (Conceptual and practical knowledge)	Testing Concepts	Intermediate	Should be able to write atleast 10 positive test cases, few negative test cases & boundary conditions for any given software application say google.com	Ability to write codes with minimum error
	Java	Basic	Should have basic knowledge & project experiences in Java	Ability to comprehend, collaborate and communicate with clarity
	Non-functional testing	Basic	Should know what is performance testing, few tools like Load Runner or Jmeter	Flexibility - Ability to stretch support in additional tasks whenever required
	Automation & API	Intermediate	Should have knowledge on using any of the automation tools like Selenium, Appium, REST using Java or similar Programming language	Inter Team - Collaboration
	Cloud Technologies	Basic	Should know the concepts of AWS / Azure or Google Cloud	Intra Team - Collaboration
	Security Testing	Basic	Should know few security tools like Burpsuite, Nessus, NMAP etc.	Proactiveness - Has proactive approach in identifying coding issues and solving them.

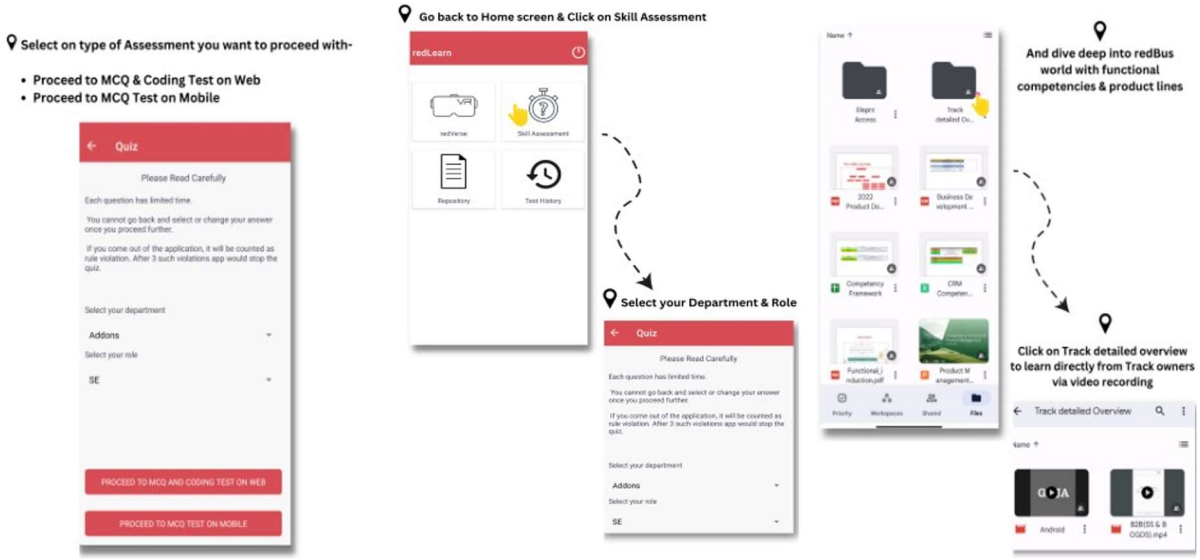
Sr. Lead/Lead - QA

Parameters	Core Skills	Proficiency Level Required - Basic/Intermediate/Expert	What needs to be known	Important Competencies
Job/Functional Knowledge (Conceptual and practical knowledge)	Testing Concepts	Expert	Should be able to write atleast all positive test cases, many negative test cases & boundary conditions for any given software application say google.com	Problem Solving - Identifies problem patterns, issues, opportunities and redesigns the areas of ownership. independently troubleshoots systems/sub-systems effectively. Proven exeprience solving problems of speed/scale/concurrency issues on distributed systems
	Java	Intermediate	Should have working experience in a few projects in Java - Specially Selenium or Appium or similar technologies.	Inter Team - Collaboration
	Non-functional testing	Intermediate	Should know what is performance testing, few tools like Load Runner or Jmeter	Intra - Collaboration
	Automation & API	Intermediate	Should have working experience on using any of the automation tools like Selenium, Appium, REST using Java or similar Programming language	Delivery - Planning projects, management of dependancies, success criteria defining and delivering, prioritization, predictibility, change managment
	Tools Knowledge and Debugging skills	Expert	Should know several tools like Postman, Android Debugging skills, REST Assured or Soap UI. Should be detailed oriented and should have good debugging skills.	Org Building - Influencing positively in hiring processes, providing feedback for improvement, mentoring team members/high potentials, evangalize the adoption of new tech, external conference participation and representing redBus
	Mobile Automation	Expert	Appium / Expresso / XCUITest or any tool experience	Reliability - Is the go-to person who will get the task delivered without any follow ups. Can be entrusted with delivery without monitoring.
	Cloud Technologies	Intermediate	Should know the concepts of AWS / Azure or Google Cloud, should know few monitoring tools, deployment tools etc.	Proactiveness - Has proactive approach in identifying coding issues and solving them.
	Security Tools	Intermediate	Should know multiple security tools like Burpsuite, Nessus, NMAP etc.	Direct and indirect people management skills.

Source: Company-provided documents

Exhibit 7

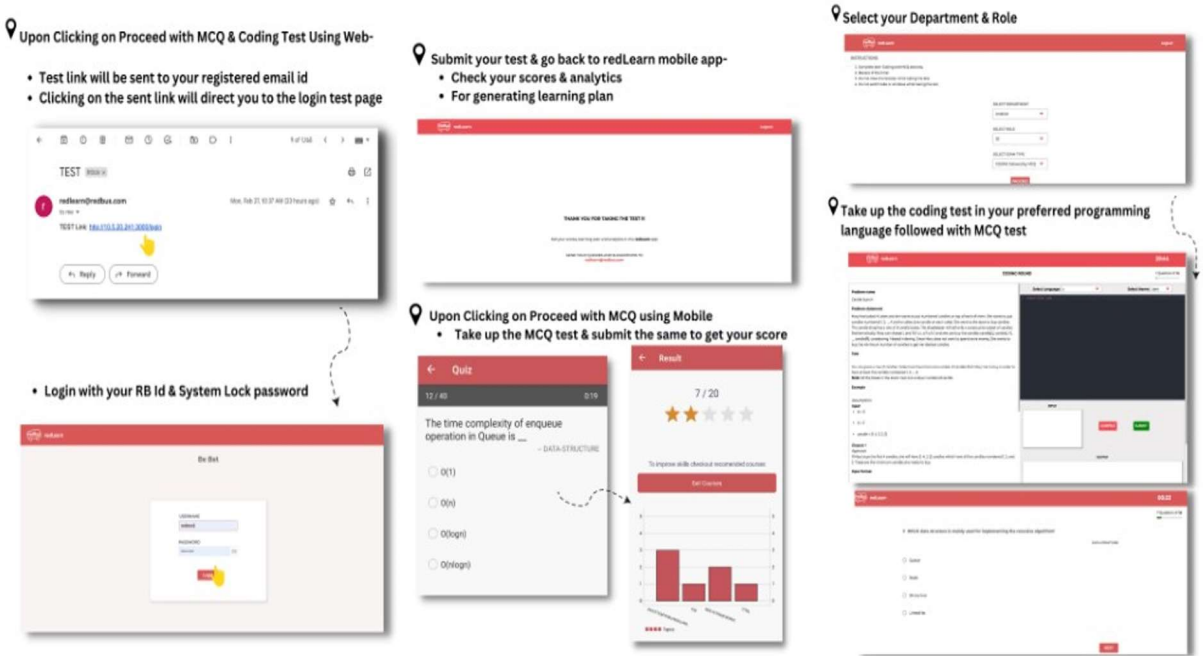
redLearn Learning and Assessment Interface



Source: Company-provided documents

Exhibit 8

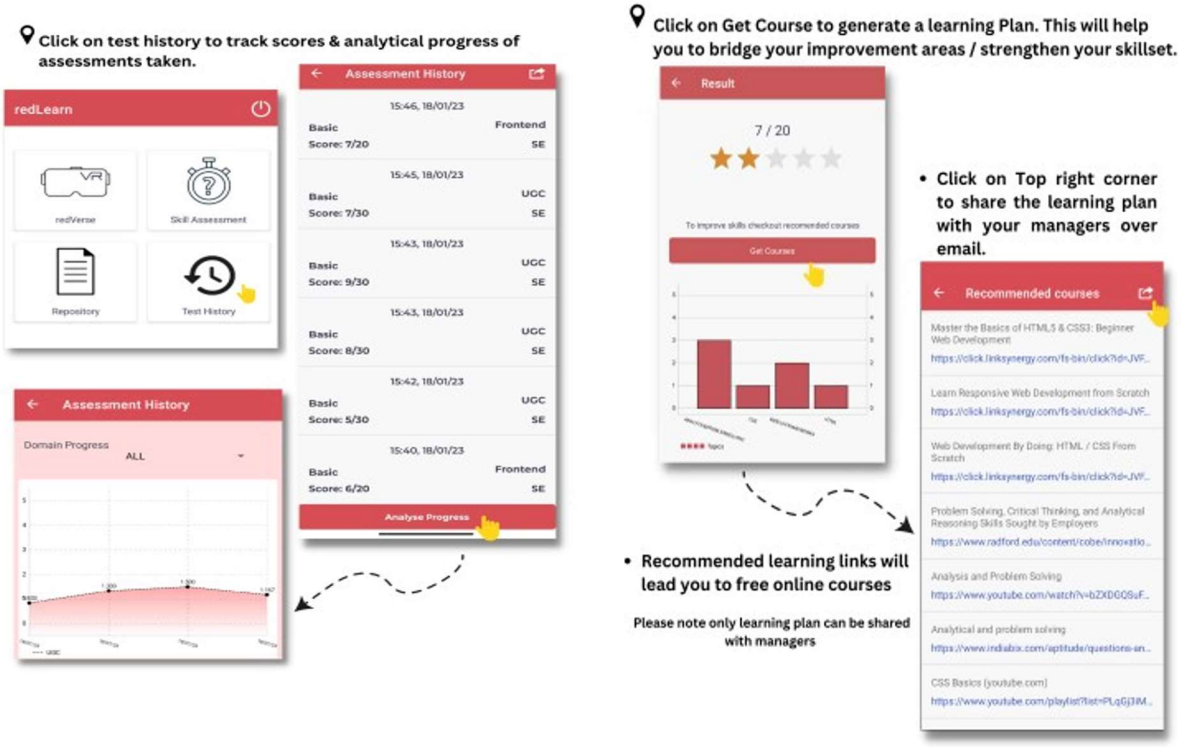
redLearn Assessment Interface



Source: Company-provided documents

Exhibit 9

redLearn's Post-assessment Learning Support



Source: Company-provided documents

Exhibit 10

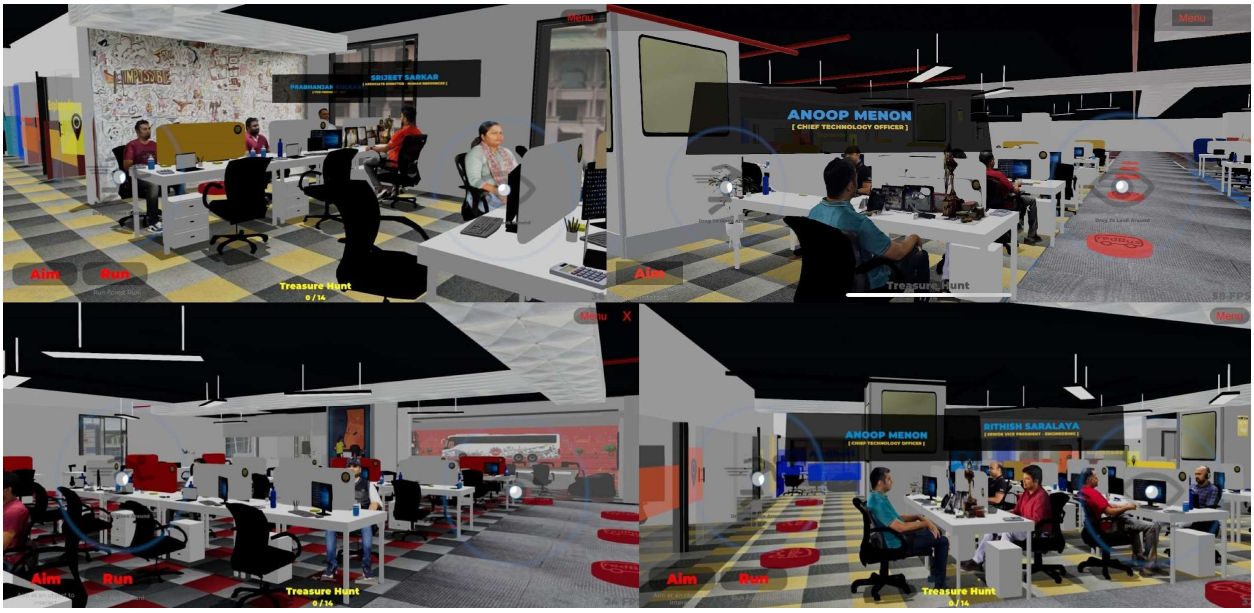
Employee Mapping based on Individual Competency Assessment

redLearn courses flagged-Pre Assessment	redLearn courses flagged-Post assessment	redLearn Pre Assessment Scores	redLearn Post Assessment Scores	Psychometric Test - Locus of control	Psychometric Test - Need for cognition	Psychometric Test - Left/Right Brain	Psychometric Test - Communication Style	Psychometric Test - Johari Window	Team Allocated
DBMS	JavaScript and SQL	10/30	16/30	External Locus	Low NFC	Left Brain	Process & People	Balanced(equal)	Mobile App
JAVA	ReactJS and NodeJS	15/30	16/30	External Locus	High NFC	Left Brain	Process Oriented	Hidden	Search Engine Optimisation
ANALYTICAL PROBLEMSOLVING, JAVA	MongoDb, ReactJs	10/30	23/30	Internal Locus	High NFC	Balanced	Idea Oriented	Balanced(equal)	Inventory Platform
JAVA & SQL	Node.js, React.js	9/30	18/30	Internal Locus	High NFC	Left Brain	People & Process	Open	Third party gateway
JAVA & DBMS	Mongo,Reactjs	10/30	15/30	External Locus	High NFC	Left Brain	Process Oriented	Open	Browser Tech
JAVA & SQL	javascript, Nodejs	14/30	18/30	Internal Locus	High NFC	Balanced	people oriented	Open	Search Engine Optimisation
JAVA & SQL	Mongo, reactjs	7/30	12/30	Internal Locus	High NFC	Balanced	people oriented	Blind & Unknown	Bus Tracking

Source: Company-provided documents

Exhibit 11

redVerse Office



Source: Company-provided documents

Exhibit 12a

redVerse City

Source: Company-provided documents

Exhibit 12b

redVerse City

Source: Company-provided documents