

Individual Final Summary Assignment

Cover Page

Title:

Individual Final Reflection Report – OrgPath

Class Name:

CSE 486: Capstone II

Team Name:

OrgPath – AI-Driven Succession Planning Tool

Brief Project Description:

AI-driven platform for succession planning using performance data and analytics.

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1. Description of the Overall Project

Motivation:

The motivation behind OrgPath was to solve a real world problem faced by organizations: ineffective succession planning and lack of visibility into employee potential. Traditional promotion systems often rely on technical skills and subjective judgment, which can overlook high-potential employees with strong leadership or soft skills. Our project aimed to create a data driven platform that evaluates employees character and provides meaningful insights for managers and executives.

This problem is significant in today's workplace, where companies are increasingly focusing on leadership development and retention. By introducing analytics and structured evaluations visualization tools, OrgPath helps organizations reduce leadership gaps and make more informed decisions. The project also aligns well with modern HR technology trends, making it both practical and impactful.

Requirements:

The system was designed with several key functional and technical requirements. Functionally, it needed to allow managers to evaluate employees based on multiple soft skill dimensions such as communication, adaptability, and leadership. It also had to support succession planning by enabling managers to assign future roles, track readiness levels, and identify skill gaps.

Furthermore, the platform required role-based dashboards tailored for employees, managers, and executives.

From a technical perspective, the system required a secure backend with role-based access control, integration with a PostgreSQL database, and support for real-time data updates. It also needed to include performance dashboards, reporting features, and export functionality. Non functional requirements included scalability, responsiveness, security, and usability. Especially when handling large datasets and sensitive employee information.

Work Completed:

Over the course of the semester, our team made significant progress in building a full-stack application. We developed multiple dashboards for different user roles, including employee views, manager evaluation interfaces, and executive analytics dashboards. Key features included the 5-step evaluation wizard, the executive 9-box talent matrix, and the succession planning module.

During Sprint 10, major work focused on enhancing reporting, security, and user experience. As noted in the Sprint 10 report, our team successfully implemented features such as the interactive 9-box matrix, secure report export, audit logging, and the employee feedback system.

Additionally, backend improvements supported aggregation queries and historical rating data.

Final product testing confirmed that all major features worked end to end, including authentication, report generation, and succession planning . The system successfully demonstrated integration between frontend, backend, and database components, validating the overall design.

Defining the Best of the Work:

What makes OrgPath stand out is its focus on combining soft skill evaluation with data driven decision making. Unlike traditional HR tools, our system does not just store employee data but actively generates insights such as promotion readiness, talent density, and hidden potential. The executive 9-box matrix is a particularly strong feature, as it translates complex performance data into a simple, actionable visualization.

Another key strength is the role-based design of the system. Each user type interacts with a tailored interface, improving usability and relevance. The integration of security features like RBAC and audit logging also ensures that the system is suitable for real world enterprise environments.

System Diagram/User Stories:

The system follows a full-stack architecture consisting of:

- Frontend (React + Tailwind UI)
- Backend (Node.js APIs)
- Database (PostgreSQL)

Key user stories included:

- Managers evaluating employees through a structured workflow
- Executives analyzing talent using dashboards and matrices
- Employees viewing feedback and performance data

These user stories guided development and ensured alignment with real user needs.

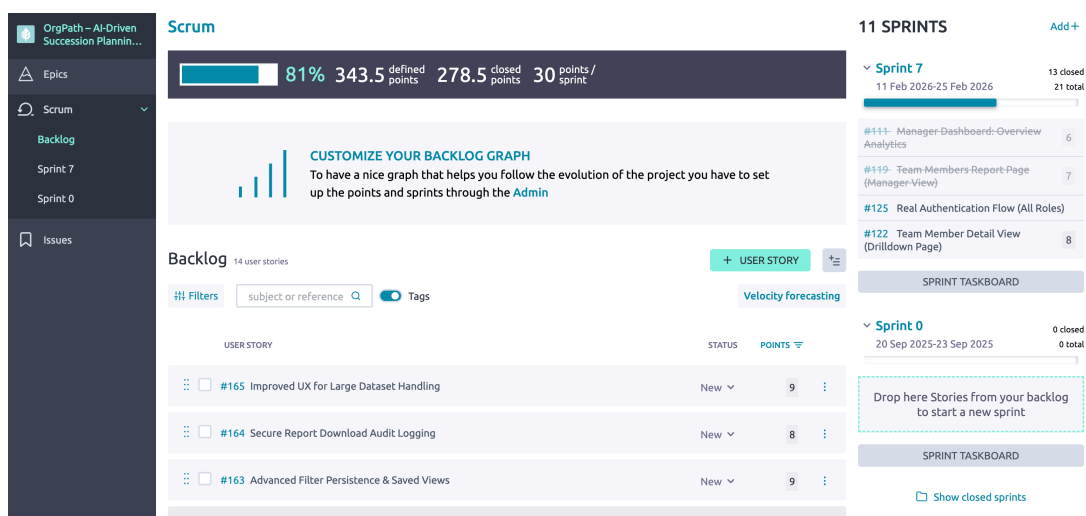


Fig 1: Taiga Board

OrgPath – AI-Driven Succession Planning Tool

SYSTEM ARCHITECTURE DIAGRAM

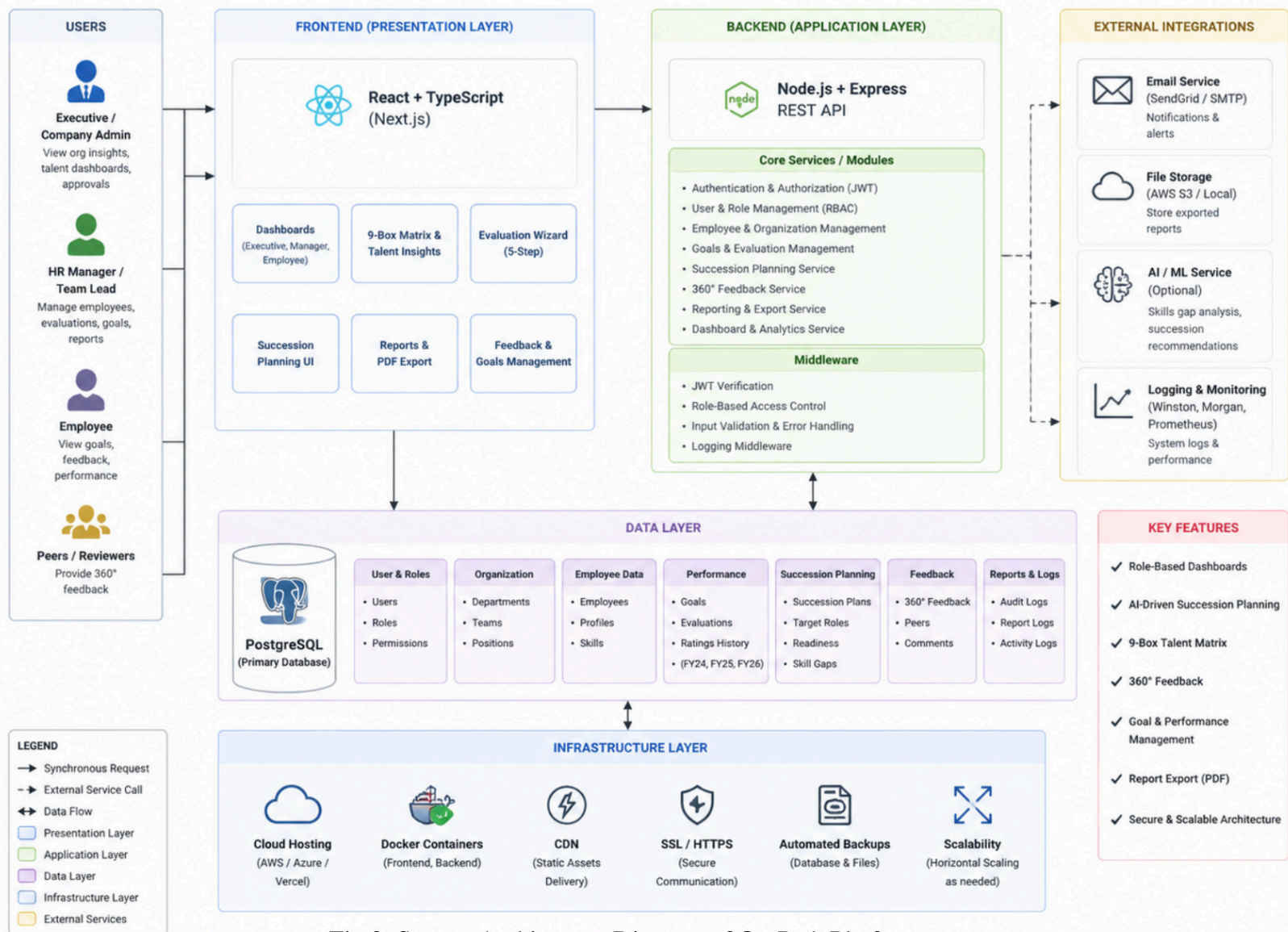


Fig 2: System Architecture Diagram of OrgPath Platform

Other Details:

The project includes multiple dashboards, interactive visualizations, and exportable reports. The use of real world testing scenarios and sprint based development allowed us to continuously improve the system. Screenshots further demonstrate the system's functionality and progress. These visuals demonstrate the system's usability, real time data integration, and role based interaction across different user types.

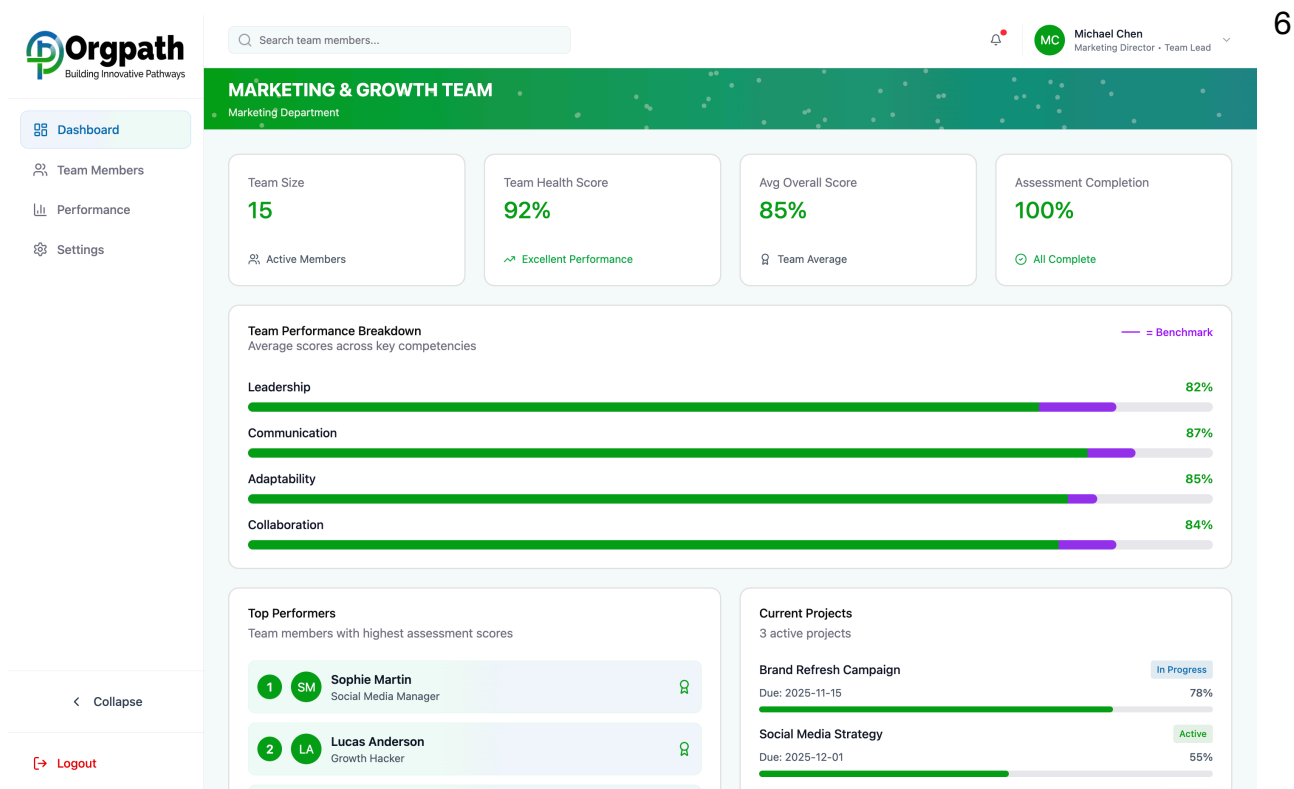


Fig 3: Manager Dashboard displaying team performance metrics

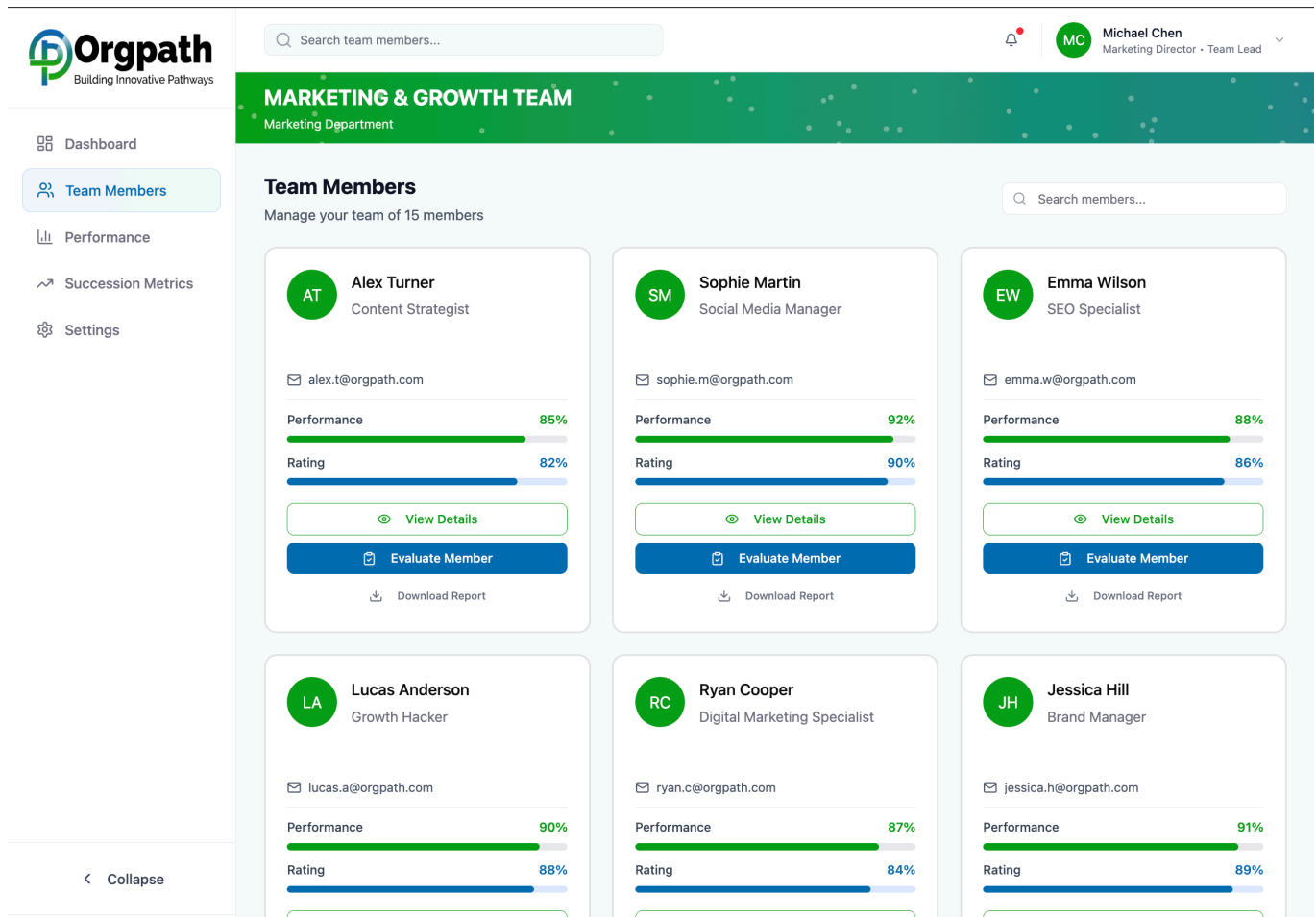


Fig 4: Manager Dashboard displaying team members metrics

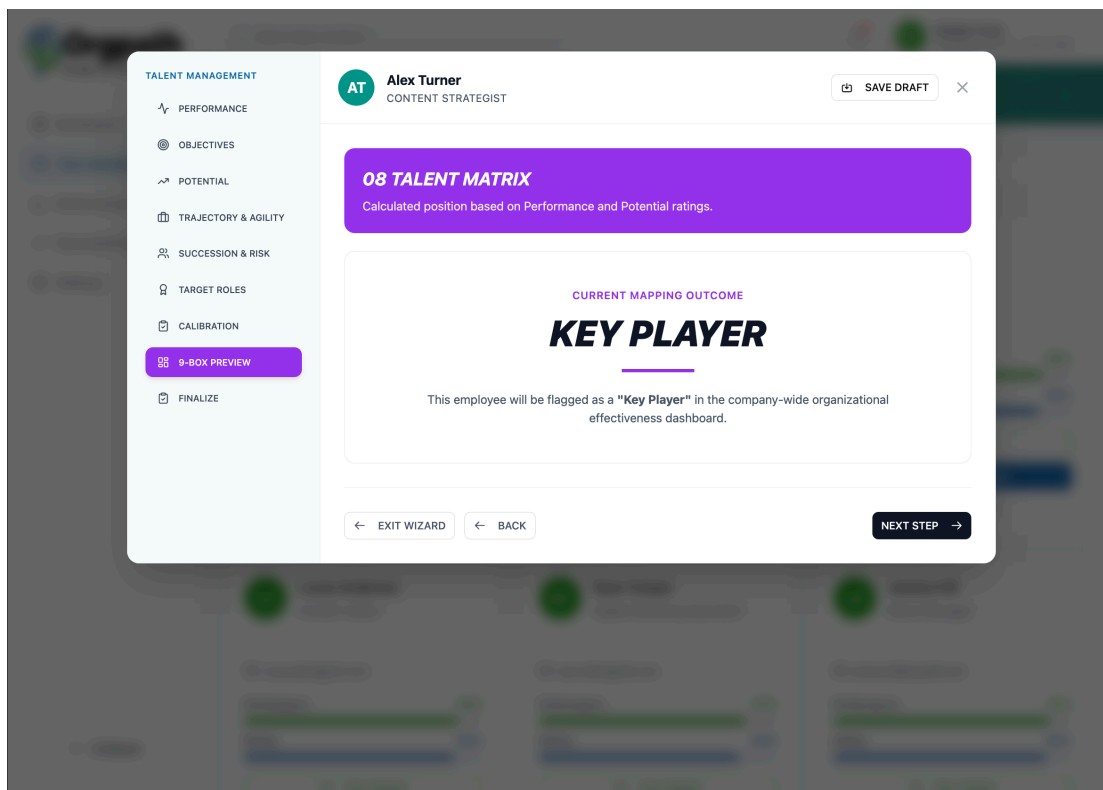


Fig 5: Employee Evaluation Wizard (Step-based workflow)

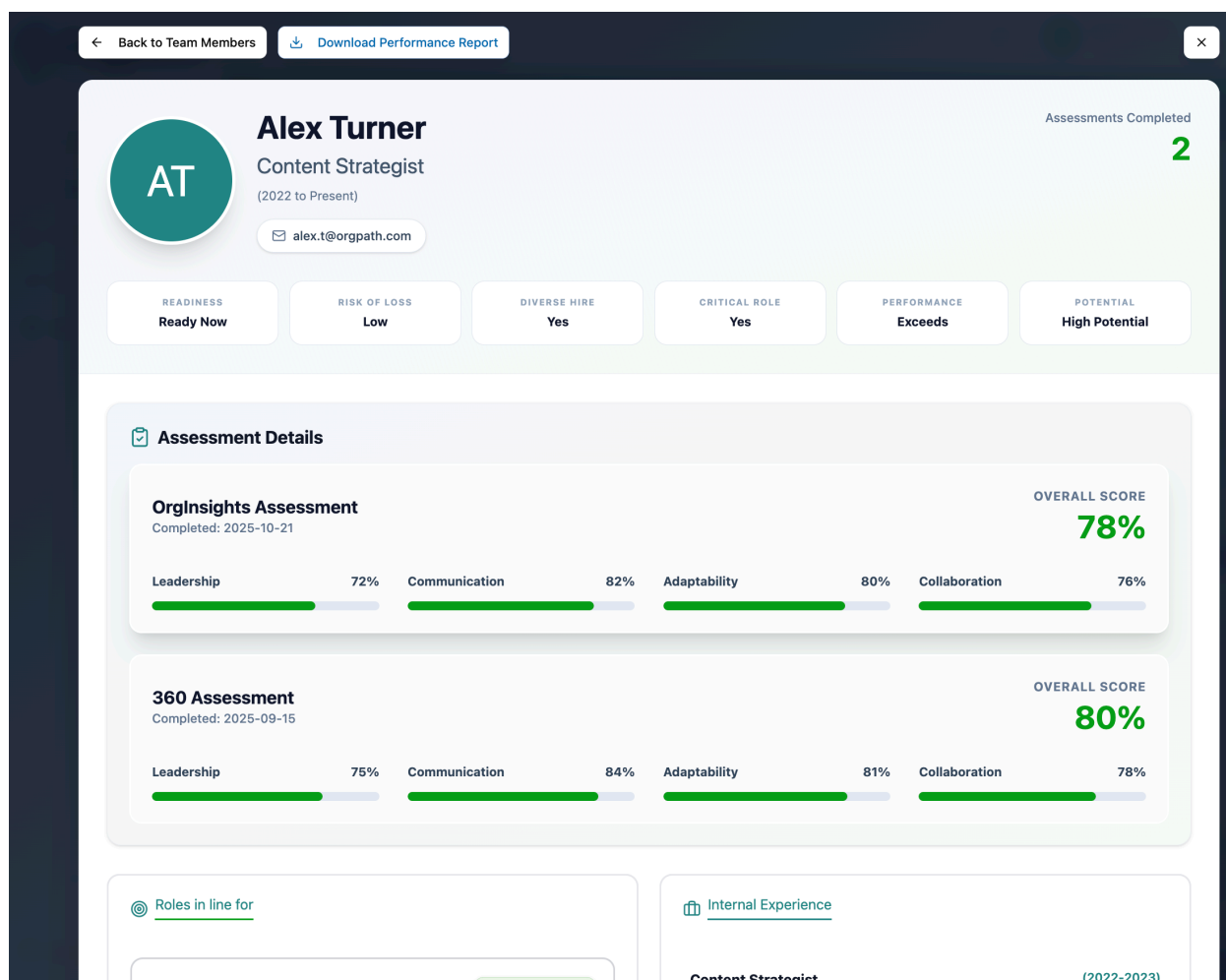


Fig 6: Employee Profile with performance and feedback summary

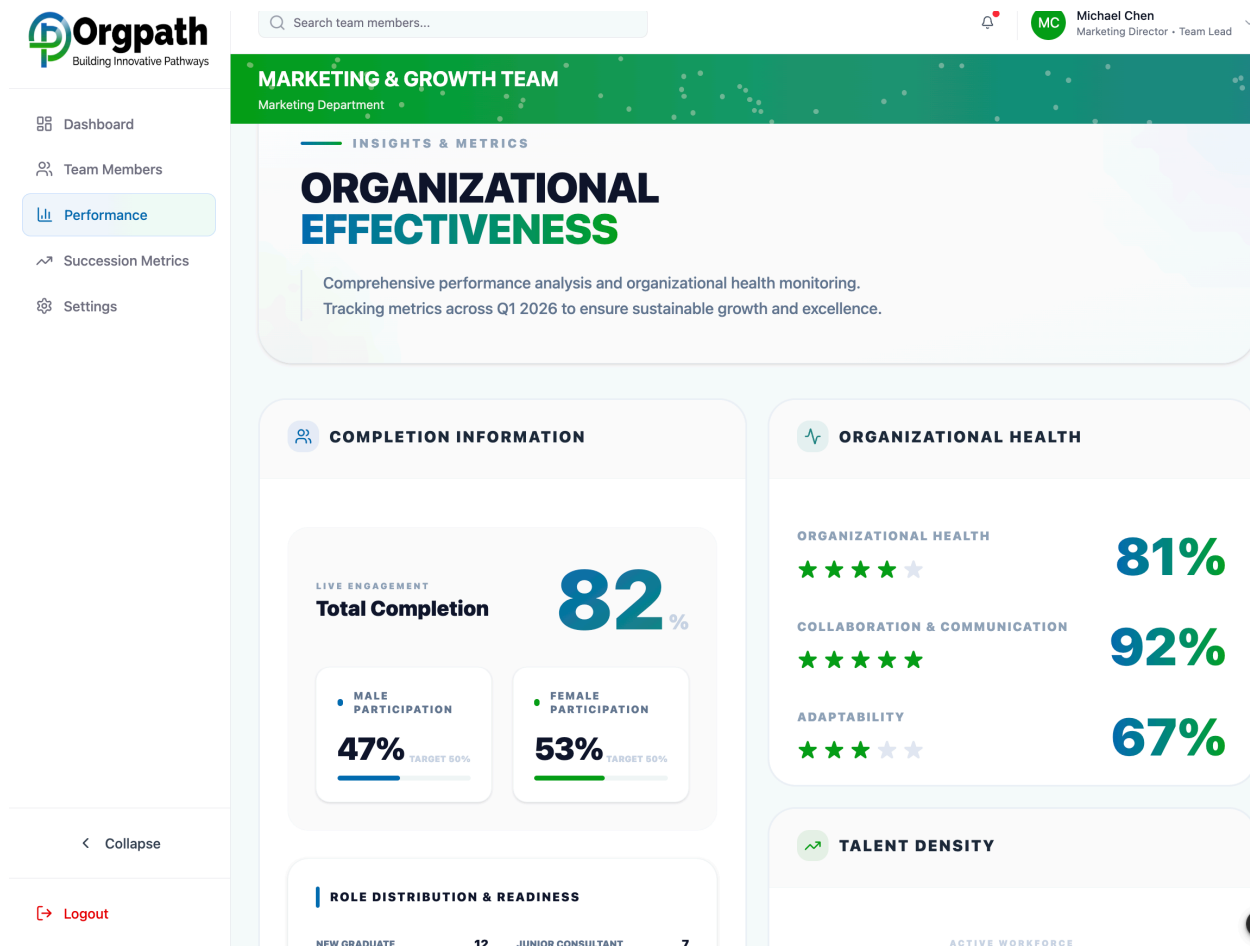


Fig 7: Dashboard showing organizational effectiveness metrics

2. Summary of Your Contributions

Team Management:

Throughout the project, I contributed to coordinating team activities and ensuring that tasks were progressing across sprints. I actively participated in sprint planning meetings, helped break down user stories into manageable tasks, and ensured that frontend and backend work remained

aligned. I also contributed to tracking progress through the Taiga board and making sure it's always up to date.

One area where I performed well was maintaining consistency across tasks and helping connect different parts of the system. For example, when working on frontend backend integration, I ensured that API responses matched UI expectations. However, I could have improved by taking a more proactive leadership role during earlier sprints, especially in delegating tasks and anticipating dependencies.

Presentations:

I contributed to multiple presentations throughout the semester, including sprint reviews and the final showcase. My role primarily involved explaining technical features such as dashboards, integrations, and user workflows. I also helped structure presentation content to ensure it was clear and aligned with project goals.

Additionally, I worked on refining how we communicated our project to non technical audiences. This included simplifying explanations and focusing on the value of the system rather than just the implementation details. One area for improvement would be practicing delivery more to improve confidence and clarity during live presentations.

Reports:

I played a significant role in writing and refining project documentation, including sprint reports, summaries and Taiga board. I contributed to reports in a clear and professional format, ensuring that they met rubric requirements and effectively communicated our progress.

In particular, I helped ensure that reports included detailed descriptions of user stories, risk management, and contribution metrics. I also reviewed and edited content to improve clarity. Moving forward, I could improve by adding more technical depth in certain sections, especially when describing backend processes.

Product Development:

My main contributions were in frontend development and system integration. I worked on building key UI components such as dashboards, the 9-box matrix, and report export features. I

also contributed to integrating frontend components with backend APIs, ensuring that data flowed correctly across the system.

During Sprint 10, I contributed to implementing performance indicators, improving UI responsiveness, and supporting integration tasks that helped move features into the “Ready for Test” stage . I also supported testing and validation efforts, helping ensure that the system worked end to end.

One strength in my work was focusing on usability and making sure the UI remained intuitive. However, I could improve by deepening my backend knowledge to contribute more evenly across the full stack.

3. Value Created

Economic Value:

OrgPath creates economic value by helping organizations make better promotion and succession decisions. Poor hiring and promotion decisions can be costly, leading to reduced productivity and increased turnover. By providing data driven insights, the system helps companies identify high potential employees and allocate resources more effectively.

Additionally, the platform reduces manual effort in performance evaluation and reporting. Features such as automated dashboards and report generation save time for managers and HR teams. This increases efficiency and allows organizations to focus on strategic decision making rather than administrative tasks.

Social Value:

From a social perspective, OrgPath promotes fairness and transparency in employee evaluation. Traditional systems often rely on subjective judgments, which can introduce bias. By using structured evaluation criteria and data-driven insights, the platform encourages more objective decision making.

The system also empowers employees by giving them visibility into their performance and growth opportunities. This can aid with career development. However, it is important to ensure that the system is used responsibly and does not create unnecessary pressure or competition among employees.

4. Reflection on Ethical Issues

Ethical Concerns:

One of the main ethical concerns in this project is data privacy. The system handles sensitive employee and manager information, including performance evaluations and feedback.

Unauthorized access or data breaches could have serious consequences for individuals and organizations. To address this, we implemented role-based access control and secure authentication mechanisms

Another concern is the potential misuse of evaluation data. If used improperly, the system could reinforce biases or be used to unfairly judge employees. It is important that organizations use the platform as a decision support tool rather than a sole determinant of promotions. Ensuring transparency and allowing human oversight are critical for ethical use.

A third concern involves algorithmic fairness. Although OrgPath uses structured criteria to reduce subjectivity, the data fed into the system may still reflect historical biases from within the organization. For example, certain groups of employees may have received lower ratings in the past due to systemic factors rather than actual performance. This could cause the platform to reinforce existing inequities rather than address them. To mitigate this, organizations should periodically review evaluation outcomes for patterns of unfairness and ensure that human judgment remains central to any final decisions made using the system.

5. Conclusion

Summary of Reflections:

Overall, this capstone project was a valuable learning experience that helped me develop both technical and professional skills. I contributed to building a full-stack system, and gained experience in agile development, system design, and real-world problem solving. I enjoyed working with the team and gained organizational and collaboration skills.

On a personal level, this project pushed me outside of my comfort zone in ways I did not expect. There were moments during the semester where managing deadlines, coordinating with teammates, and debugging integration issues all happened at the same time, and learning to stay focused and communicate clearly under that pressure was a growth experience in itself.

One of my key accomplishments was contributing to frontend development and integration, helping bring complex features like dashboards and reporting to life. At the same time, I recognize that I can improve my backend expertise and take on more leadership responsibilities in future projects. This project has not only strengthened my technical abilities but also shaped how I approach building scalable systems in real world environments.

Objectives for the Future:

Moving forward, I plan to strengthen my full-stack development skills, improve my ability to design scalable systems, and become more confident in leading technical discussions. This project has given me a strong foundation and a clearer understanding of how software can create real world impact. I also plan to seek out opportunities where I can take on more of a leadership role, whether in a professional setting or through side projects, so that I can continue growing both as an engineer and as a collaborator.