Individual Management Diagnostic & Final Report

Formal Organizational Structure:

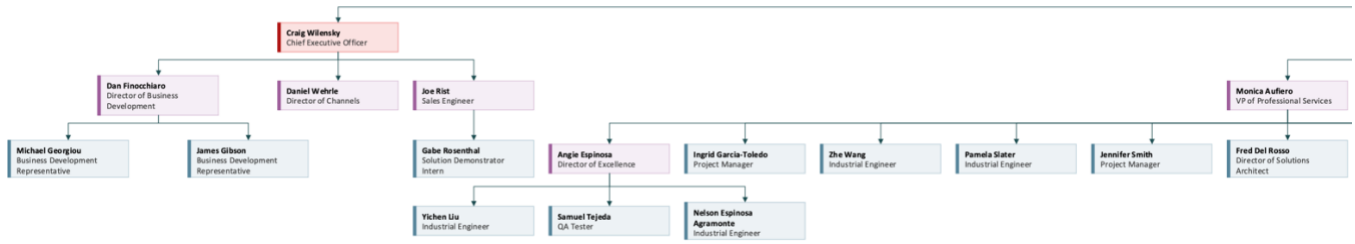


Figure 1: JASCI Software Organizational Structure 1/3 (Leftmost)

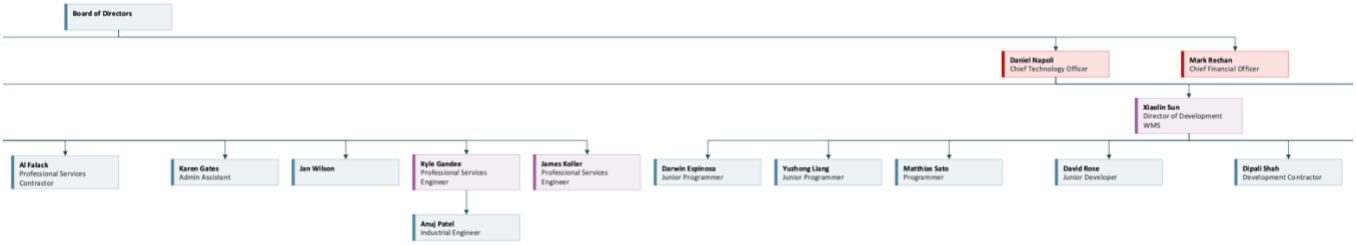


Figure 2: JASCI Software Organizational Structure 2/3 (Middle)

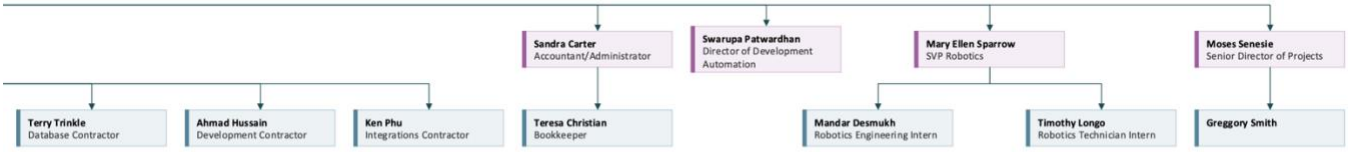


Figure 3: JASCI Software Organizational Structure 3/3 (Rightmost)

JASCI Software is a small, quickly growing supply chain and logistics SaaS provider originally based out of New York City currently headquartered in Boston. The company was established in 2015 by industry veterans and technical experts who sought to digitally transform and automate the warehouse management experience. Their first beta-testing customer, Cookies Kids, a youth clothing company based out of New York City, has played a pivotal role in their product growth. Key competitors include top WMS providers such as Manhattan Associates, Blue Yonder, Zebra Technologies, Oracle, and SAP. The

company primarily focuses on the supply chain and logistics industry, serving sectors such as retail, wholesale distribution, consumer packaged goods, and e-commerce.

JASCI Software has a matrix organizational structure with departments in sales, finance, software engineering, industrial engineering, and project management. The typical project entails a cross-functional team with a technical lead from industrial engineering, project manager, and various technical specialists such as software engineers, database administrators, and cloud engineers. Given the company's matrix organizational structure, cross-functional, project-based collaboration play important roles in its operation and strategy. Considering the main types of projects within JASCI, including client software implementations and internal research and development of new platform functionality, this structure is advantageous as it enables dual reporting of functional and project managers, complex decision-making, flexibility, and adaptability. Given the high growth rate of the company and its desire to scale, the matrix organizational structure is tempting, but comes with its trade-offs. Some departments are resource constraints like cloud engineering, so with the matrix organizational structure this presents new challenges with communication and coordination, where certain technical specialists are stretched thin across several competing cross-functional projects, yet talented at what they do.

Cultural Audit:

As a quickly growing small technology company, JASCI Software's culture is innovative, dynamic, yet disorganized. Employees are encouraged to think outside of the box, take risks, and explore creative solutions; however, they may face challenges due to lack of structure in processes and coordination. The culture benefits and supports ambitious employees with technical ideas to scale the business such as the change proposal of a reinforcement learning with human feedback automation system, therefore the culture is engineering-strong, but disadvantages employees from corporate, more structured, and less technical backgrounds who may also be ambitious, but in need of clear onboarding, mentorship, processes, and coordination. Not only due to the change proposal aligned with the company's future-forward culture but also due to my proclivity to manage through innovation, creativity, and a

healthy dose of disorganization, overall, this culture aligns closely with my personal strengths and management style.

Let's look at employee reviews at Glassdoor. On the positive side, we see multiple reports of good, hardworking co-workers; a fast-growing company; supportive environment; continuous learning; and competitive pay. The culture favors employees who are hungry to learn and want to be a part of a quickly-growing, high-risk environment – they reward them not only in pay but also in supportive culture and a multitude of learning opportunities with mentors and industry experts.

Figures 4 and 5: Glassdoor Review Word Count: Pros (Figure 4; Left) & Cons (Figure 5; Right)

On the opposite side, we see a culture painted as unforgiving, sink-or-swim, unbalanced, and constrained. Employees report challenges keeping up with the pace of growth, catching onto their role or quickly veering of course with lack of guard-rails and support. This elucidates the dualism of the company's culture, where if an employee fits the archetype of innovation, high-risk and prioritized technical expertise, they are supported to a much higher degree than employees who don't. Therefore, the company bases its value off the employee archetype given its constrained resources, and risk of investing time and money in the wrong resources.

Alumni Interview:

Songlin Liu is a software engineer at Block who started his journey in mechanical engineering. Originally attending Shanghai Jiao Tong University, Songlin received his Bachelor of Science in mechanical engineering before attending Carnegie Mellon to earn his Master of Science in mechanical engineering. Critical points in Songlin's journey were rooted in his strong ambition and cross-functional capabilities. Nearing graduation, given the worsening job landscape for mechanical engineers and

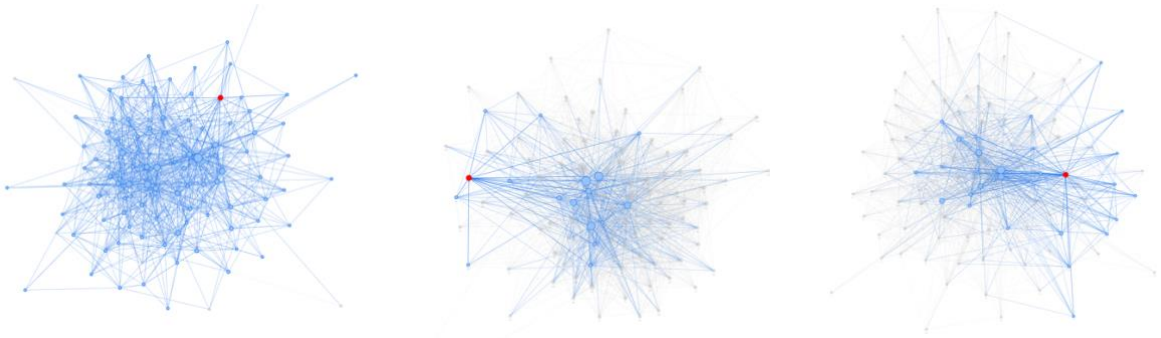
especially international graduates, Songlin pivoted to software engineering, learning how to program, and attending a job fare which ultimately landed him a job at Microsoft for over four years! Carnegie Mellon prepared him for his career through its first-principles approach to engineering and its tech-oriented curriculum; although Songlin studied mechanical engineering, there was strong emphasis on coding in his coursework which laid the foundation for him to transition to software and tech – software-oriented courses provided him the most value in his first position at Microsoft. And if he had to do it over again, Songlin would have studied software engineering or computer science at Carnegie Mellon but to this day has no regrets. Songlin describes his professional network as technically driven and limited to students he's worked with closely at Carnegie Mellon, friends in the tech industry, as well as co-workers at Microsoft and Block who are almost all software engineers. Ultimately, he advised that in my career I focus time on the most emerging technologies that are of interest like artificial intelligence, as well as to continually build technical skills to remain competitive in the evolving job market.

Individual Network Analysis:

I have a strong LinkedIn network of more than 4,500 connections. The top five companies my connections work for are Apple, Microsoft, Amazon, Google, and Carnegie Mellon; and most of them speak English as a first language, live in the United States, and are current students or alumni of Carnegie Mellon. This indicates a skew toward the technology industry, which is where most of my interests reside, especially in artificial intelligence and machine learning. Over 95% of my connections work in technology-related industries. The top professions of my connections include technical project managers, and software engineers.

While technology constitutes my long-term interests and much of my desire to attend Carnegie Mellon given its reputation in data-driven science and artificial intelligence, I could use more diversity in the industries of my connections. For example, healthcare, energy, social services, supply chain and logistics are all industries that are growing increasingly closer ties to technology through digital transformation. Aside from industry, the professions of my connections are highly skewed toward

technical roles, therefore I could use more diversity in people management and other non-technical oriented roles as they drive several critical business functions needed on cross-functional teams in and out of tech. Finally, my network could use more diversity in terms of non-US companies; much of technology innovation is being driven by other countries such as China, pioneering new applications of digital currency and artificial intelligence to name a couple.



Figures 6, 7 and 8: My Advice (Figure 6; Left), Communication (Figure 7; Middle) and Trust (Figure 8; Right) Networks

Next let's have a look at my class networks. From a high-level, I am on the outskirts of the communication network driven by my introverted and shy nature; relatively well trusted among a strong but limited network; and not often regarded for advice by a majority of the cohort, although I often seek their advice, setting a bad trend and "taker" perception. Being well trusted among the cohort is a pre-requisite to scale the communication and advice networks, which can be done by engaging new skills, professional experiences, and extroverted strategies such as improved questioning, attendance of more social events and storytelling. Let's dive into each of these networks and the metrics that stood out.

The betweenness centrality metric aligns with these high-level observations, nearing the median of the class for trust but much less so for communication; this means my trust network maximizes the diversity of relevant information, but that I will need to take more initiative in establishing more communications with my classmates, stepping out of my introverted and shy tendencies. In terms of centrality, I reside in the lower quartile of indegree centrality for advice – to improve this metric, I'll need to better communicate my skills and vision for newly gained skills especially in data science and artificial intelligence so that I am seen as more competent, and as more of an advisor than novice. A final metric

that caught my eye was eigenvector centrality, which was understandably low for communication and advice networks given my network-level abstraction from brokers, but surprisingly high for the trust network compared to the rest of the class. From a high-level, I'll need to replicate when I've done with the trust network on the communication and advice networks, identifying the brokers of which I have several in mind (e.g. Aritra and Ming), and building stronger relationships with them to increase my power and status within the cohort via eigenvector centrality.

Change Management Proposal:

I propose the implementation of reinforcement learning with human feedback in a robotics module at JASCI Software. JASCI isn't new to artificial intelligence nor robotics, leveraging proprietary technologies such as ALIDA, autonomous AI technology that distributes work autonomously for robotics, eliminating complex integrations, open work assignments, and more. Through numerous implementations we have learned that each customer is unique, driven by their niche use cases, workflows, and hardware requirements – RLHF now seamlessly customizes their user experience without the need of costly software development and integrations like we've done in the past. This change is critical to optimize the efficiency and accuracy of existing robotics automations with NextShift Robotics, as well as to set the framework for a variety of other robotics providers to quickly integrate to our platform with user-customized experiences. RLHF will build on top of ALIDA and home in on the user experience by strategically incorporating optional screens where the user rates the performance of associated transactions of the robotics system, specific to their tenancy and factored into the learning of their custom AI models. Ultimately, this change will significantly improve our robotics software performance and user experience.

How will we get this done? We'll need the right team consisting of our CTO, workflow solutions architect, two software engineers, and a project manager – these team members will need to be fluent in AI, and if not already take the machine and deep learning specializations from DeepLearning.ai to prepare before we launch our change initiative. This initiative will need to be approached as R&D with a

dedicated allocation from each team member aligned with key criteria: 18-24 months and ~4800 hours to completion.

We'll first need to create a sense of urgency with key stakeholders in growing audiences including the COO, CEO and CTO, showcasing the significant data-driven benefits and cost-savings tied to RLHF implementation. Following this, we must assemble a guiding coalition composed of the project team and key brokers of the company, whose responsibility will be to craft the precise vision and strategy for the project; the objective will be to elevate JASCI Software to a prominent innovator in the WMS automation space through the continuous improvement of its artificial intelligence technologies and user experience. Effective communication of the vision and strategy will be paramount, and the vision will need to be translated into actionable steps for employees and customers via workshops, demonstrations, and Q&A sessions to visualize the future of the new system. Simultaneously, employees and customers should be encouraged to continuously learn and adapt to the change well before its full implementation. Generating short-term wins, including a minimum viable product (MVP), will be a key milestone in the change initiative, validating the proposal of RLHF and furthering the buy-in from other key stakeholders and brokers. Finally, to ensure sustainable implementation of RLHF, we'll need to ingrain the technology and its approaches into the company culture and customer experience, adjusting performance metrics to encourage innovation, strengthening of our core AI technologies, and learning from our mishaps along the way. In any case, open, ongoing communication will be essential for each step of this change initiative process; it is critical the project manager facilitate this and keep deliverables and stakeholders on track.

Management Diagnostic:

I'll need to strategically allocate resources for the RLHF change initiative to be a success, accounting for a technical and solutions architect, my role as the project manager, and a couple of software engineers well versed in AI. Although my management training, implementation and automation projects experience, and credentials in AI equip me with the necessary skills to drive this change, there's a resource concern due to simultaneous company-wide initiatives. Therefore, I may need to supplement the

project team with software architecture and engineering experts in AI. Furthermore, our infrastructure systems will need to be audited to verify their ability to support RLHF and to ensure scalable compute. Therefore, a granular budget to with multiple resource scenarios and coverage of the platform-level costs will be essential early on.

As the guiding coalition is formed, I'll first need to focus on converting brokers and initial advocates within the organization, establishing rapport with them if not already through networking strategies and events – these individuals constitute my ideal network, and serve as potential mentors and career advocates down the line, so it is important that strong connections are made. And ideally, these individuals are well-versed in AI and ML, familiar with current technologies and well-connected with the executive team and other key stakeholders needed to drive the change initiative forward. These individuals are critical given their power, status, and comprehensive networks; with a broker's buy-in, the change initiative is much more likely to gain the buy-in of key stakeholders and be successful. As broker and initial advocate buy-in of the change initiative is established, I'll need to shift focus to convert key stakeholders such as the executive team through 1-1's with a converted broker like Ken. As key stakeholders and executives buy in, most other stakeholders will need to be converted through the guiding coalition, providing coalition members the tools used to reach their buy-in such as the proposal and broker strategy, maximizing on the network effects. This method of networking will minimize time of buy-in for the change initiative, while maximizing the probability of its success.

To change my current social network to the ideal one described above, I'll need to leverage my already strong connections with Ken, an executive sponsor and broker within the company. Ken can introduce me to other brokers, whom I can propose the change initiative to as well as offer value to by asking about their initiatives, how I can support, and offering mutual value wherever possible. Because these individuals are not just well connected but highly skilled, it will also be critical I establish mentorships with as many as possible, gathering their feedback, learning as much as possible from them and maximizing career growth.