

Team formation and fostering diverse expertise in engineering ventures

This case study examines an important aspect of the entrepreneurial journey, namely how to build, lead, nurture and reward a teams building new ventures.

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Teaching Case Factsheet

Discipline: Management and business studies

Introduction

Tony Trapp started as an academic lecturer before becoming a minority and then majority owner, director, and key contributor to the successful development of multiple engineering-focused businesses. This case study examines an important aspect of his entrepreneurial journey, namely how to build, lead, nurture and reward a team of engineers when building new ventures. His aim was to improve technology, guide young people to become outstanding engineers, create wealth, and distribute it equitably.

Background

Tony Trapp's background in academia and his interest in working with people laid the foundation for his entrepreneurial aspirations. After completing his college education and gaining valuable experience, he pursued a Newcastle University degree in agricultural engineering, followed by a PhD, where a new startup business, SMD, was established by his supervisor to exploit the technology being developed. SMD then lay dormant for a few years. After his PhD Tony accepted a lectureship in agricultural engineering at Edinburgh University. After 5 years, his realisation that he wanted a different trajectory for his life prompted him to resign from his permanent lectureship and return to Newcastle University on a 6-month temporary contract. This bold move was an early demonstration of his willingness to take risks and pursue his passions, setting the stage for his entrepreneurial journey. Teaming up with two university colleagues Trapp re-joined SMD as an owner-director. SMD, which now focused on technological innovations for rapidly developing sectors with urgent technology requirements, had the necessary funding to solve the technical challenges at-hand. North Sea oil and gas pipelines, and submarine fibre optic cables required novel ways when it came to deploying them in the sea. Key activities involved the design of technology (seabed tractors and

ploughs) to bury pipes and cables in the seabed. This required the development of a new understanding of the failure mechanism of a range of seabed types.

SMD's early years were marked by rapid development, trials, and errors. Trapp's team learned valuable lessons from their failures and gained recognition by winning the MacRobert Award in 1994 for their innovative contributions. After 19 years of making significant contributions to SMD, he departed from the company to work on establishing and growing new ventures.

Building and Leading High-Performance Teams

Throughout his entrepreneurial endeavours, Trapp has emphasised the importance of entering growing markets with sufficient financial potential. From an early stage, he learnt first-hand the dual challenge of marrying technical expertise with business acumen. Engineers at SMD, driven by research and development, also had to adapt to sales and business roles to ensure commercial success. This transition required a blend of skills and mindset, highlighting the importance of multidisciplinary proficiency in entrepreneurship. Diversifying clientele and markets, at SMD and subsequent ventures, found success by providing innovative solutions within industries that could support sustained growth. This strategic alignment enabled the companies to thrive amidst market fluctuations. For this to happen, though, Tony had to rely on a well-rounded team of talent.

Trapp's approach to talent recruitment and development was a pivotal factor in the success of his ventures. His focus on recruiting bright young engineering graduates and nurturing their growth in the right environment contributed to the rapid emergence of capable and professional engineers. By fostering a culture of continuous learning, innovation, and shared ownership, Trapp generated value and wealth for all team members.

Recruitment and Evaluating and Selecting Well-Rounded Engineers

Interviewing candidates was an important first step in assessing engineers and their fit to the team. Tony observed candidates' interactions and engagement during the interview process. A candidate's genuine interest in the discussion and their ability to ask insightful questions signalled their curiosity and willingness to explore beyond their technical expertise. The interview process aimed to assess candidates' adaptability and potential to become well-rounded engineers. The involvement of student placements in active commercial projects during their period in the business provided a glimpse into their ability to immerse themselves in different aspects of the business and contribute effectively. It also ensured that they returned to the business on graduating.

Tony's approach to evaluating and selecting well-rounded engineers highlighted the importance of attributes beyond technical knowledge. When evaluating potential candidates, he looked beyond technical expertise. He sought individuals who exhibited a genuine interest in the world around them and demonstrated an understanding of basic principles. By assessing qualities such as curiosity, enthusiasm, problem-solving skills, and adaptability, he identified individuals who could thrive in a dynamic and multifaceted business environment. This curiosity and broader perspective were indicators of a well-rounded mindset, suggesting that the candidates could adapt to different challenges and engage with various aspects of the business, and with customers.

Academic credentials themselves were not enough. For instance, there was an instance of a candidate from a prestigious institution who struggled with a seemingly simple technical question. The candidate's inability to work out the flow of forces demonstrated a lack of problem-solving skills and practical understanding. This incident highlighted the significance of assessing candidates' ability

to think critically and apply their knowledge in real-world scenarios and not just rely on their qualifications as a proxy of their capabilities.

He also believed in the importance of recognising characteristics that might not be evident on a CV. He valued candidates who displayed genuine enthusiasm, energy, and spirit. These qualities reflected a proactive and engaged approach, which he believed was vital for success in a dynamic and innovative environment.

He emphasised the importance of gauging whether he could work with the candidates for an extended period. This emphasis on interpersonal dynamics, combined with technical competence, contributed to his ability to build cohesive and successful teams. This nuanced approach to candidate evaluation contributed to his success in building effective and innovative teams over the course of his 45-year entrepreneurial journey.

Leadership: The importance of a strong sense of purpose

Trapp's ability to lead teams effectively was grounded in a clear sense of purpose. His ability to rally and lead teams into uncharted business territories speaks to his capacity to articulate a compelling vision and instil confidence in his colleagues. He leveraged a combination of clear communication, his own credibility, and the potential of the ideas to attract individuals who were willing to step away from their comfort zones and embrace new challenges. His regular "state of the nation" talks and emphasis on aligning his team with a shared vision created a cohesive and motivated workforce. While he may have lacked formal business education, his leadership was guided by experience, a deep understanding of the industry, and a willingness to learn and adapt.

The challenges of convincing others to join in unproven endeavours were not lost on Trapp. He recognised that his own successes and failures provided valuable lessons, and he understood the need to balance caution with calculated risk-taking. By meticulously selecting colleagues and former collaborators who shared his values and vision, he managed to create core teams willing to take those leaps of faith.

The Skill Set Dilemma: Engineering-Centric Leadership

Trapp's acknowledgement of his engineering expertise as a central aspect of his ventures was coupled with a profound understanding that success required a more holistic approach. Rather than seeing technical proficiency as limiting, he appreciated its potential to serve as a solid foundation upon which a diverse and versatile team could be built. His comparison of assembling a football team resonates deeply in this context. Just as a successful football team comprises various positions with distinct roles, namely midfielders for strategic play, defenders for protection, and attackers for goals, Tony's ventures necessitated a similarly balanced blend of skills and perspectives. His realisation that thriving in the entrepreneurial arena demanded more than just technical acumen became the catalyst for his mission to create a culture of well-roundedness.

In his pursuit of this balanced culture, Trapp embarked on a journey to broaden the skill sets of his engineering colleagues. He recognised that engineers, while pivotal in the technical realm, could significantly enhance their contribution by expanding their horizons beyond engineering and technology. Encouraging them to delve into the realms of business, finance, and entrepreneurship served a dual purpose: it not only equipped his team to address a wider spectrum of challenges, but also empowered them to make strategic, informed decisions that fuelled the growth of the business.

By instilling financial acumen and entrepreneurial thinking within his engineering teams, Trapp fostered a dynamic synergy. Engineers, armed with a broader understanding, were better equipped

to collaborate with colleagues across disciplines. This interplay of diverse skills and perspectives enabled his ventures to navigate complexities with agility, solve intricate problems, and envision innovative solutions that might have remained elusive in a siloed approach. Moreover, Trapp's commitment to well-roundedness went beyond enhancing the team's immediate capabilities. It reflected his foresight about the evolving landscape of entrepreneurship, which demanded adaptability and a comprehensive perspective. By cultivating an environment in which engineers were encouraged to embrace business intricacies, he was effectively nurturing a generation of professionals poised to succeed not only in their current roles, but also as future leaders and entrepreneurs.

Tony's strategic blend of his own engineering prowess with the cultivation of multifaceted skills within his team yielded a powerful synthesis. It was not just about producing well-rounded engineers. This was about creating a well-rounded ecosystem where every individual's unique strengths seamlessly interwove to amplify the overall capacity of the business.

The role of trusted colleagues in new ventures

Tony's entrepreneurial journey underscores the significance of assembling a skilled and cohesive team. His approach of enlisting former colleagues from his previous ventures served as a foundation for his subsequent businesses. All three major businesses, SMD, The Engineering Business, and Osbit, were owned and run by professional engineers. Leveraging the familiarity and expertise of trusted individuals facilitated seamless collaboration and a shared vision. By working alongside those he knew well, Trapp ensured a smooth transition into new ventures and expedited decision-making processes.

His emphasis on recruiting colleagues he had worked with previously highlights the value of both technical expertise and interpersonal chemistry. These colleagues brought a deep understanding of the industry and its challenges, as well as a sense of camaraderie that fostered effective communication and problem-solving. This approach allowed Trapp to quickly address critical issues and focus on driving the business forward. By establishing businesses with familiar faces, Trapp capitalised on existing relationships and a shared sense of purpose. This familiarity translated into streamlined operations, efficient knowledge sharing, and a strong sense of mutual accountability. The interplay of trust, expertise, and shared history played a pivotal role in accelerating the growth of his ventures.

Trapp's commitment to nurturing emerging talent is a recurring theme throughout his entrepreneurial journey. He recognises the transformative impact of providing young engineers with opportunities for growth and development. And these opportunities for personal growth came with a reward going beyond just personal development. Equitably sharing the proceeds of success with all employees of the business is a key belief of Tony's. By offering them ownership stakes and fostering a culture of continuous learning, Trapp created an environment where these engineers could thrive and contribute to the company's success. Trapp's decision to allocate shares of the company to his direct colleagues not only incentivised their commitment, but also ensured a sense of shared ownership. This equitable distribution of ownership encouraged collaboration, aligned interests, and fostered a sense of responsibility for the company's success. Such an approach can be instrumental in driving collective efforts and fostering a strong team culture.

Conclusion

Tony Trapp's journey as an entrepreneur reflects his unique blend of technical expertise, strategic leadership, and a people-centric approach. His success in transitioning from one venture to another

underscores the importance of assembling the right team, fostering diverse skill sets, and effectively communicating a shared vision. Trapp's ability to recognise the value of well-roundedness and his commitment to continuous learning offer valuable insights for aspiring entrepreneurs seeking to navigate the complexities of business and innovation. Tony Trapp's approach, characterised by building and nurturing high-performing teams, underscores the critical role that individuals play in shaping the trajectory of entrepreneurial ventures. His ability to leverage existing relationships, balance technical prowess with interpersonal dynamics, and foster a culture of shared ownership has been pivotal in navigating challenges and seizing opportunities. This emphasis on people, collaboration, and talent development offers valuable insights for aspiring entrepreneurs seeking to create and lead successful ventures in complex and competitive markets.

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