

In the first session, we delved into General Management, intricately connected with Strategy, emphasizing the importance of shaping the work environment, resource allocation, and organizational development. In the context of our AI-powered smart irrigation system project, this translates to a strategic approach involving a thorough analysis of the agricultural landscape, uncovering overlooked opportunities, and innovatively integrating new models for enhanced efficiency and sustainability.

Moving to the second session, organizational mission and vision were explored as guiding principles for companies, fostering unity, efficient resource allocation, and a positive work environment. The application of Porter's Five Forces Framework, which assesses factors like new entrants, supplier and buyer power, substitutes, and rivalry, proved valuable for strategic planning in our AI-powered smart irrigation project. The analysis indicated a medium threat of new entrants, low supplier and medium buyer power, low threat of substitutes, and moderate to high rivalry, shaping our strategy in a rapidly growing market by leveraging strengths and addressing weaknesses.

In the third session, the focus was on tangible and intangible firm assets. To determine a competitive advantage, key questions were introduced, evaluating the value, rarity, imitability, and organizational capture of a resource's value. The session underscored the interconnectedness of external and internal analyses, elucidating the relationship among traditional SWOT analysis, the resource-based model, and models of industry attractiveness. This holistic approach contributes to a comprehensive understanding of a firm's competitive position and lays the groundwork for strategic planning in subsequent sessions.

In session 4, the VRIO (Valuable, Rare, Imitate, Organized) tool was introduced to assess resource effectiveness, emphasizing the importance of dynamic capabilities for adapting to changing environments. Our project's VRIO analysis highlights key resources such as a diverse team, the Skoltech network, Skoltech patents, and access to Skoltech labs and facilities. Additionally, insights into dynamic capabilities, including market sensing, resource orchestration, innovation management, change management, knowledge management, customer relationship management, and strategic leadership, were gained. The exploration of dynamic capabilities in successful businesses stood out as a significant aspect of the course, underscoring their crucial role in organizational success.

In session 5, corporate, business, and functional levels of strategy were explored, discussing reasons for diversification and the decision to diversify or maintain focus. The BCG matrix was introduced for portfolio management, aiming to identify high-potential features, optimize resource allocation, and ensure a balanced project mix. Despite diversification possibilities in the agricultural tech sector, our team decided to stay focused on the smart irrigation system. This decision was rooted in recognizing core competencies and competitive advantages, enabling us to concentrate resources on refining our main product's quality, efficiency, and innovation.

Session 6 highlights the significance of conducting a comprehensive SWOT analysis for external and internal analysis, identifying strengths, weaknesses,

opportunities, and threats to understand a business's competitive position and growth potential. In our project, strengths include innovative technology, a diverse team, cost-effectiveness, and access to Skoltech's resources, while weaknesses involve data collection limitations, a lack of UI/UX, and the absence of an established client base. Opportunities encompass the growing global demand for smart irrigation and potential market expansion, while threats include a competitive market, regulatory challenges, buyer skepticism, and the need for substantial initial capital investment. This thorough analysis guides strategic decision-making for our project in the dynamic agricultural tech sector.

Session 7 emphasizes the crucial role of the value chain in supply chain management and introduces the Value Net, recognizing collaborative potential beyond competition. It explores alliance motivations, including risk reduction, efficiency gains, learning, and political considerations, outlining associated pros and cons. Our project aims to capitalize on these principles by forming strategic alliances, particularly joint product development with Skoltech Agro Center and joint research with institutions like IANR and the University of Benin's Department of Geography and Regional Planning. These collaborations will enhance our capabilities and provide valuable insights to address challenges in the agricultural tech sector.

In session 8, Platform Ecosystems Strategy and Entrepreneurial Strategy Application are covered. The former explains platforms, ecosystems, and their advantages, detailing various types, product architecture, and core components like interfaces and APIs. The latter delves into timing, S.M.A.R.T. goals, and a first-year survival plan, covering team assembly, firm registration, scaling up, valuation, investment rounds, and types of investors. Based on this, our project roadmap involves short-term activities like defining specifications, research, and prototyping, mid-term activities including prototype testing, algorithm optimization, and UI development, and long-term initiatives such as hardware compatibility, software platform development, and consultation. Key performance indicators (KPIs) include labeled data, ML metrics, and operational speed for specific crops.

In summary, the sessions have significantly shaped the entrepreneurial strategy for my research lab, the Skoltech Applied AI Center. The lab's sustainable competitive advantage stems from expert leadership, cutting-edge research areas, industry collaborations, and a dedicated commitment to knowledge transfer. The center's track record of successful data analysis projects and its proficiency in conducting training programs further fortify its strengths. Potential weaknesses involve reliance on key personnel and a theoretical emphasis that could lead to challenges in immediate applicability. However, opportunities lie in the growing demand for AI solutions, potential collaborations with emerging tech companies and the expanding of training programs to reach a broader audience. The center faces threats from intense competition among research institutions and AI centers, and rapid technological changes, highlighting the imperative for continuous innovation and adaptability in the dynamic realm of artificial intelligence.