

# Swot analysis for applied research technologies

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## Problem Summary Applied Research Technologies, Inc.

(ART) is facing a strategic decision in its Water Filtration Unit. The long-standing project, currently named RIMOS, has faced two market introduction failures. Despite these setbacks, the technology continues to show promise and our analysis of the available data suggests successful market introduction of the product for residential irrigation is encouraging. Analysis A SWOT and balanced scorecard analyses of marketing, finance and strategic human resource management were conducted in order to identify and decide upon potential courses of action. The following is a summary of our analysis for each respective area: Marketing Our analysis indicates a potential market population of 18.

2 million homes, which requires a 0.03% market penetration in year one to meet our projected sales (3 out of 10,000 target homes). The target market segment will be single-family detached homes in regions of the U.S. facing moderate to severe year-round drought conditions.

The \$9 billion water treatment equipment market includes home filtration units and other products not consistent with RIMOS' service. Therefore, additional market research will need to be conducted to identify highly concentrated areas where need for RIMOS is greatest. While a break-even analysis was considered, questions about increased proportion of fixed costs and reduction of unit variable cost over time through the learning curve effect make an accurate estimate difficult. Despite these concerns, our analysis shows the Southwestern United States has excellent potential to provide a pilot market for RIMOS. These consumers have landscaping

requiring lawn irrigation, limited and increasingly expensive water utilities, and a demonstrated need for the RIMOS product. The availability of established HVAC distribution channels significantly lowers the time and cost associated with market barriers to entry.

First mover advantage will also help RIMOS to achieve and sustain greater market share if the product is a success. Finance We conducted an NPV analysis with sensitivity to wholesale price (+/-20%) and market penetration rates (.02%, .03%, and .1%).

Our analysis demonstrates the project will provide positive cash flows in the forecasted five-year period if the market penetration rate of .3% is met or exceeded and wholesale unit price is at least \$1,000. Our analysis assumes the 20% ROI requirement, along with a 3% inflation rate to ensure cash flows in the NPV analysis meet or exceed an annual 20% ROI above inflation. In this case, ART's 10/15/20 target requirements are met after year one. A negative NPV is observed if wholesale price or market penetration rates fall below \$1,000, or .

.03%, respectively. To minimize the risk of financial loss and drain on division resources, divestiture of the current oil and gas filtration business could be used to partially fund RIMOS. The oil and gas filtration business units could be sold to a third party company looking to vertically integrate its operations. Strategic Human Resource Management Potential effects on organizational culture and human capital were considered for both go and no-go decisions on the RIMOS product. Our analysis suggests significant risks in talent

retention, employee motivation and the integrity of ART's entrepreneurial culture if the project is shut down.

Our analysis anticipates at least partial divestiture of the Filtration Unit and has outlined strategic human capital management plans for each potential course of action. Recommendation We recommend approval of the project based on the positive NPV forecast for predicted sales and market penetration rate, human capital considerations, and the opportunity to achieve first mover advantage in a high growth potential market with minimum barriers to entry. The \$2 million beta batch production should be used for further target market analysis, financial planning, and beta product testing. The current oil and gas filtration business should be divested, with the proceeds used for investment in other Water Management projects and the RIMOS project. Our implementation has established key benchmarks to decide whether the project should continue operation or be shut down in accordance with our alternative course of action.

Our recommended alternative course of action includes the formation of a minority interest joint venture with RIMOS promoted as a next generation technology for water purification. Key talent would be strategically re-located within the company. All assets from the existing filtration unit would be used for other company projects or divested.