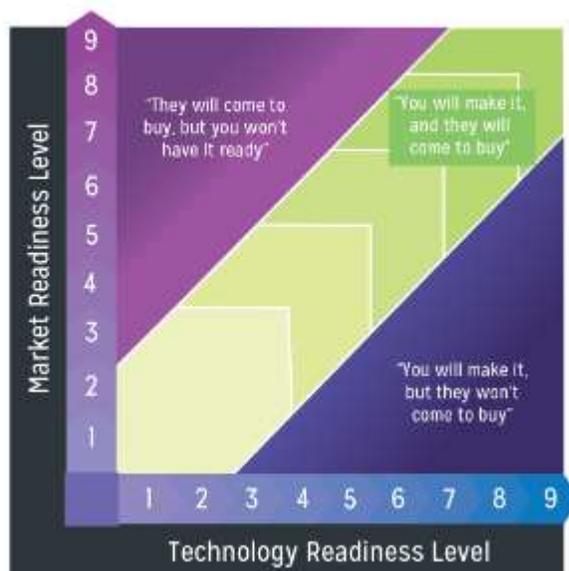


Evaluating both technology and market readiness to drive successful commercialization

The challenge: During our work with companies in the chemicals and material industries we come across clients of all sizes who drive technology development to higher readiness levels without concurrent market readiness. As the figure below shows, linear climb to just higher Technology Readiness Levels leads to a situation of “you will make it but they won’t come to buy” or if only Market Readiness Levels are improved “they will come to buy, but you won’t have it ready”. Fast and effective commercialization requires concurrent development so that, “You will make it and they will come to buy”¹.

Commercialization Readiness Levels ©STRIDE2018



How STRIDE can help:

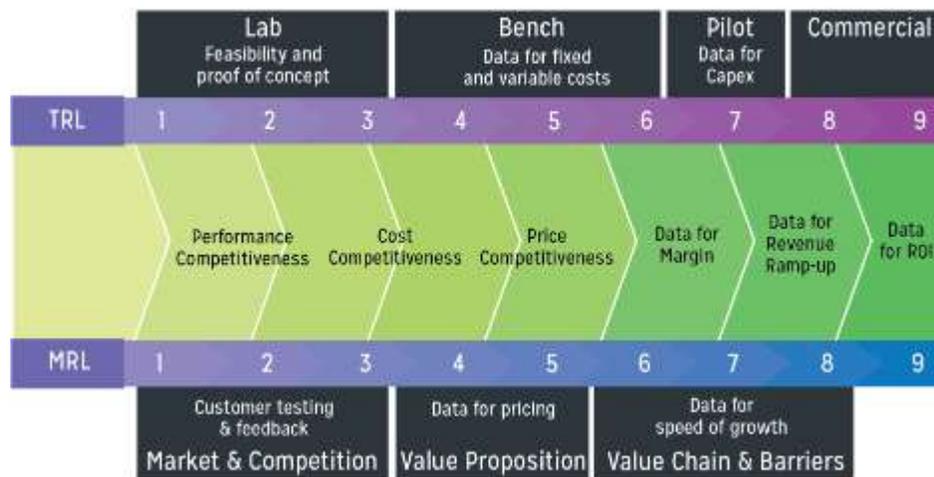
STRIDE offers commercialization assistance to clients using a Commercialization Readiness Framework with corresponding technical services and advice to support their efforts. This framework which is shown below was developed at STRIDE by adapting NASA’s 9 point Technology Readiness Levels to Chemical related technologies and combining those with a 9 point Market Readiness Levels by taking best marketing practices in the industry.

Commercialization Readiness Framework ©STRIDE2018

Technology Readiness Levels	Market Readiness Levels	Commercialization Readiness Levels
1. Basic R&D	Knowledge of applications, markets incidental	
2. Applications of Technology	Market knowledge primarily from secondary research e.g. Google search	Selection of High Potential Uses
3. Proof of Concept and Feasibility	Direct knowledge of customer(s) needs. Provides samples to customer(s)	Translate product features to customer benefits
4. Lab scale Improvement	Customer validation of performance Vs customer needs and competition	Quantification of benefits Vs competition
5. Proof of Viability	Value proposition formulated -	Data for pricing
6. Pilot scale and plant	Value chain mapped and partnerships formed.	Data for fixed and variable costs & margins
7. Commercial transition and plant design	Supply and customer agreements, regulatory compliance.	Capex estimates
8. Commercial scale trials	Widespread customer approval	Revenue and Ramp-up rate
9. Commercial scale consistent production	Consistent quality and manufacturing reliability	ROI and Growth

When working with clients we find that they grasp the definitions of the TRLs and MRLs but often lack objectivity in using the information they gather particularly in developing a Value Proposition and assessing Value Chain barriers². In the figure below we show how these critical steps influence key decisions on pricing, and projected rates of revenue growth and how these impact profits and time to get decent returns on investment. Having a third party such as STRIDE to challenge biases and mental models reduces risks to both companies and their investors. For more information and detailed definitions of TRLs and MRLs and case studies contact seetha.coleman-Kammula@stride2future.org

Commercialization Readiness Framework ©STRIDE2018



1. Rainer Hasenauer; Andreas Gschöpf, INITS; Charles Weber: 2016 Proceedings of PICMET '16: Technology Management for Social Innovation.
2. McKinsey: "The path to improved returns in materials commercialization"

Contact us to learn more at research@stride2future.org