Always/Never

We ALWAYS

1

2

3

We NEVER

4

5

6

FLIP the narrative!

1

2

The Best Ideas

Do One Thing Great

Technologies

1

2

3

4

5

6

Focus on doing
ONE thing GREAT

1

2

The Best Ideas

3 Year Technology Development Roadmap

		Y1 Q1	Y1 Q2	Y1 Q3	Y1 Q4	Y2 Q1	Y2 Q2	Y2 Q3	Y2 Q4	Y3 Q1	Y3 Q2	Y3 Q3	Y3 Q4
Business Objectives	Financial												
	Staffing												
	Marketing												
	Intellectual Property												
Project Milestones	R&D												
	Manufacturing												
	Financial												
	Business												
Key Decision Points	R&D	Test											
	Manufacturing												
	Financial												
	Staffing												
	Marketing												
	Intellectual Property												
Technical Development - Systems													
Technical Development - Components	Engineering Services												
	Mech Beam Steering Device												
	Mech FSOC System												
	Non-Mech Beam Steering Device												
	Non-Mech FSOC												
	Subcontracts												

Company Strategy Vision Board

Values

Value 1

Value 2

Value 3

Mission

Purpose/Cause/Passion:

Our Niche:

Vision

Aspirational Vision of the Future:

Boundary Conditions

Exclusions (what we are not, what we don't do):

Constraints (fundamentals of our business we cannot change):

1 Year Picture	5 Year Picture	10 Year Picture
Narrative (why it is very important to put energy into this work):	Narrative (why it is very important to put energy into this work):	Narrative (why it is very important to put energy into this work):
Revenue Target:	Revenue Target:	Revenue Target:
Metrics:	Metrics:	Metrics:
1.	1.	1.
2.	2.	2.
3.	3.	3.
Resources:	Resources:	Resources:
1.	1.	1.
2.	2.	2.
3.	3.	3.
Goals for the Year:	Goals for the Year:	Goals for the Year:
1.	1.	1.
2.	2.	2.
3.	3.	3.

Product Strategy Vision Board

Problem	**What problem are we solving?**
Product	**How does our product solve the problem?**
Proof	**How do we prove to our customer that our product actually solves the problem? (specific & measurable)**
Customer	**Who has this specific problem and is able to purchase our product?** **What customer segments are we choosing not to address right now?**

1 Year Picture	**5 Year Picture**	**10 Year Picture**
Narrative (why it is very important to put energy into this work):	**Narrative (why it is very important to put energy into this work):**	**Narrative (why it is very important to put energy into this work):**
Revenue Target:	**Revenue Target:**	**Revenue Target:**
Metrics: 1. 2. 3.	**Metrics:** 1. 2. 3.	**Metrics:** 1. 2. 3.
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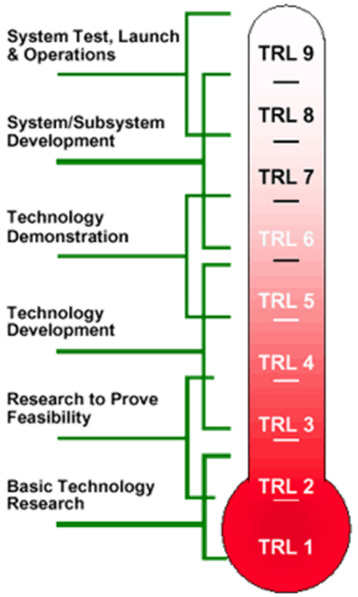
Technology Tree / Mind Mapping

Technology Readiness Levels - Manufacturing Readiness Levels



Material Solutions Analysis	1	Basic manufacturing implications identified.
	2	Manufacturing concepts identified
	3	Manufacturing proof-of-concept developed
	4	Capability to produce the technology in a laboratory environment
Technology Development	5	Capability to produce prototype components in a production relevant environment
	6	Capability to produce a prototype system or subsystem in a production relevant environment
Engineering and Manufacturing Development	7	Capability to produce systems, subsystems or components in a production representative environment
	8	Pilot line capability demonstrated. Ready to begin low rate production.
Production and Deployment	9	Low rate production demonstrated. Capability in place to begin full rate production.
Operation and Support	10	Full rate production demonstrated and lean production practices in place.

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Creating Your Strategic Technology Roadmap
Quick Reference Guide

Collider presented 13 July 2023

The Technology Development Roadmap (TDR) is a *visual, living* document that:

- Is product focused / metric driven
- Is a function of time
- Builds alignment and provides focus

Start with BOUNDARY CONDITIONS:

- Consider BOUNDARY CONDITIONS at both the *company and product levels*. You can even go more granular based on your organizational structure.
- Capture metrics that are *meaningful, measurable, and a function of time.*

Align your technology development with your company and product VISION.

Revisit your VISION document quarterly, with key elements:

- **Company level: MISSION, VISION, VALUES**
- **Product level: PROBLEM, PROMISE, PROOF**

The 2 most fundamental questions are:

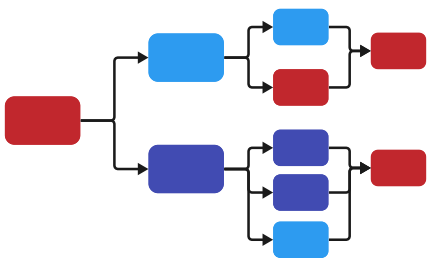
Is our solution new and different? **&** ***How likely are you to purchase our product?***

Build your Technology Tree:

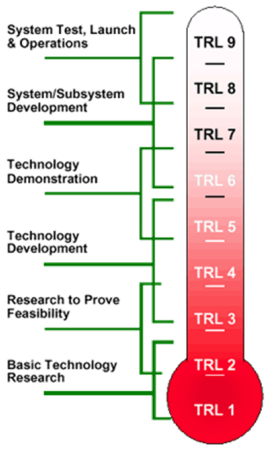
The technology tree shows decision points and technology development steps leading towards defined metrics. It's a useful tool to help visualize a program before creating the technology development roadmap.

TECHNOLOGY TREE

A form of Mind Mapping that helps "brain dump" everything we know about our current technology development plans and activities.



Technology Readiness Levels - Manufacturing Readiness Levels



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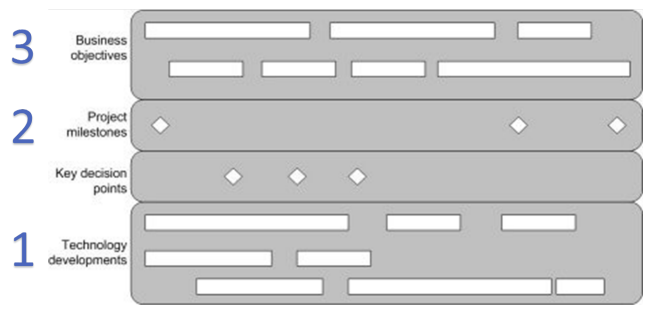
TRL/MRL

Readiness Levels can help set basic goals and milestones for your development program



Build your Technology Development Roadmap (TDR):

Use your technology tree, boundary condition metrics and TRL/MRL goals to create a visual technology development roadmap. Start with the technology development layer first, then add your milestones and decision point layers. Finally, add a business objectives layer to ensure strategic alignment between your business goals and technology products.

TDR

A Gantt chart format roadmap with technical, business, and operations layers that stack to create a comprehensive strategy document

INCLUDING IP ON THE TDR

Decision points and IP protection activities take planning, so they should be in the plan.