

Technology-to-Market

Activities beyond the purely technical



U.S. DEPARTMENT OF
ENERGY

Energy Efficiency &
Renewable Energy

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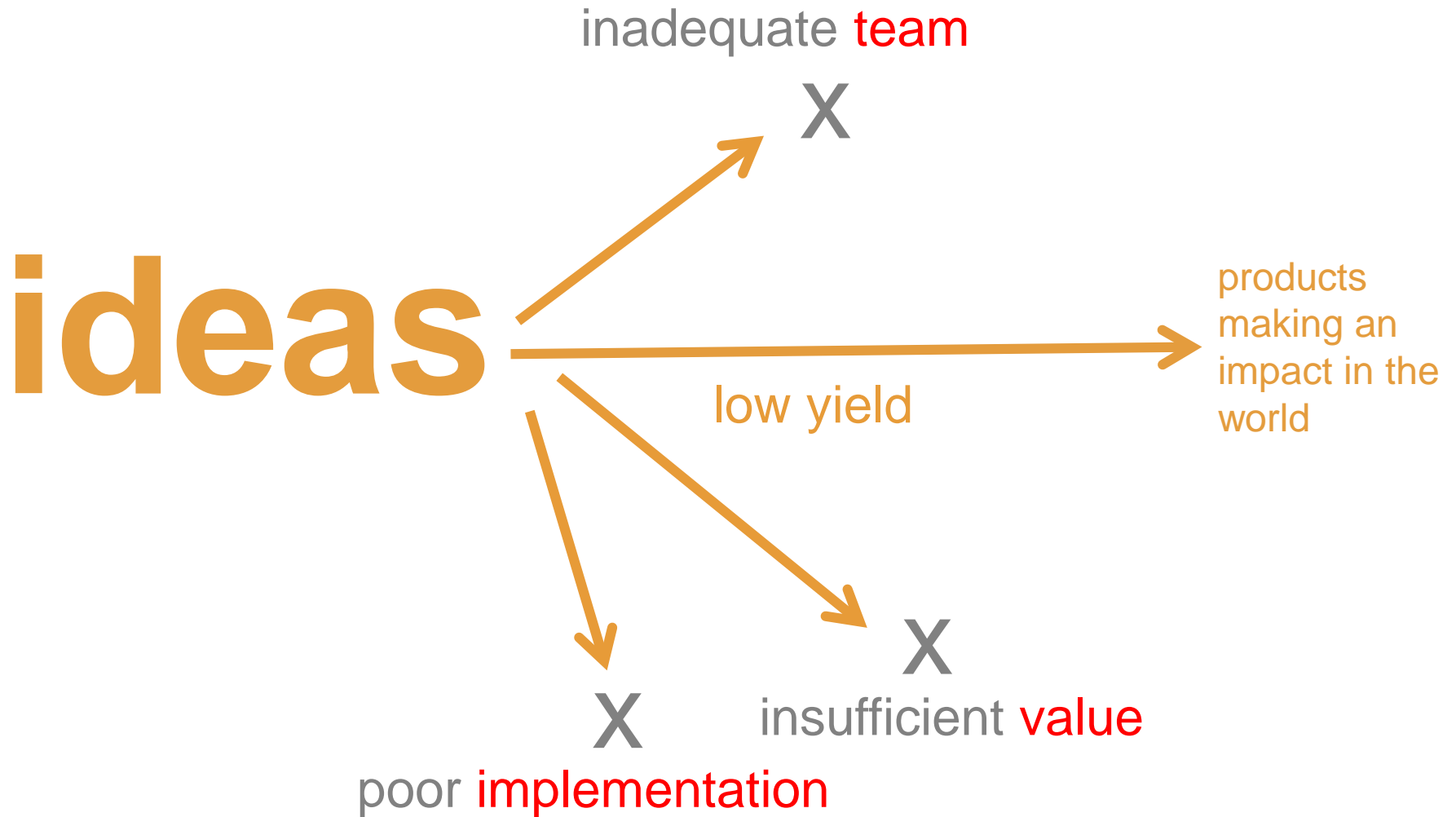
“People creating value through the implementation of new ideas”

Herman D’hooge, Intel
Innovation Network

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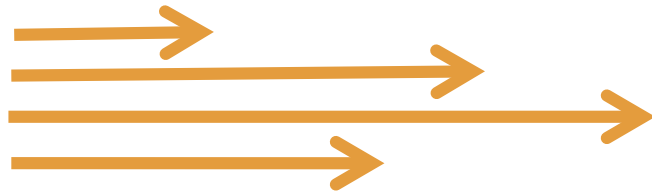
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Improving the Yield



The purpose of T2M is to maximize impact

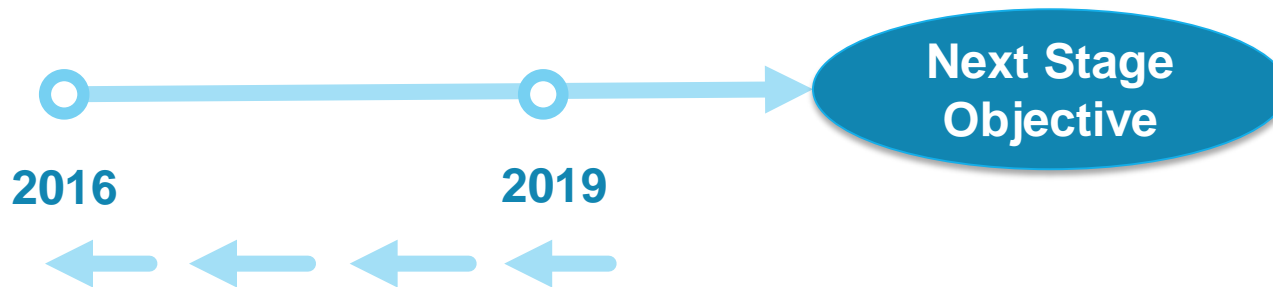
ideas



products
making an
impact in the
world

- + value
- + team
- + implementation

T2M “Month 37” thinking and roadmap

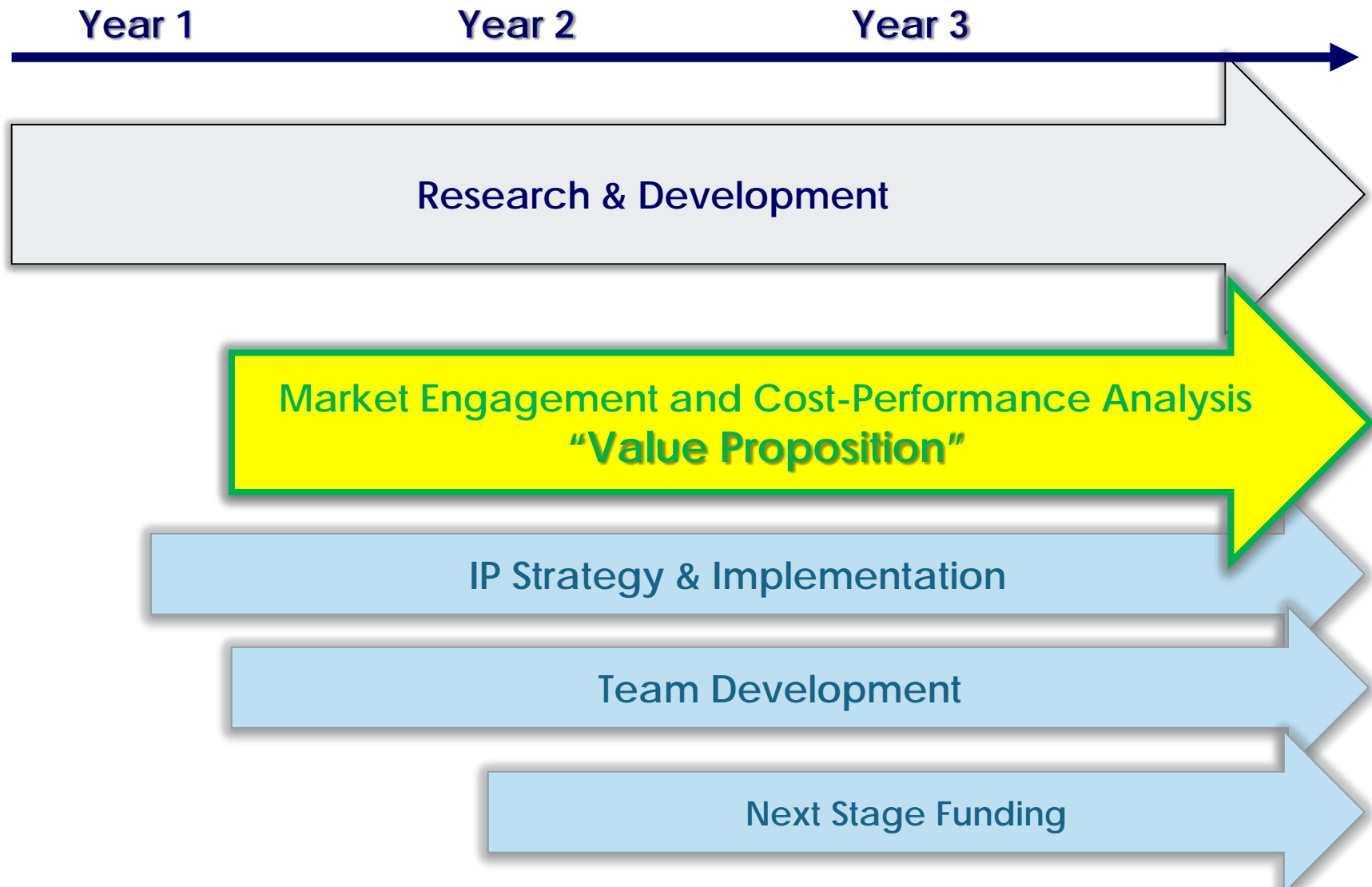


T2M milestones and plan

Closely aligned and intertwined with technical deliverables with feedback loops to steer tech development

Thinking from the end is critical and allows setting key interim milestones.

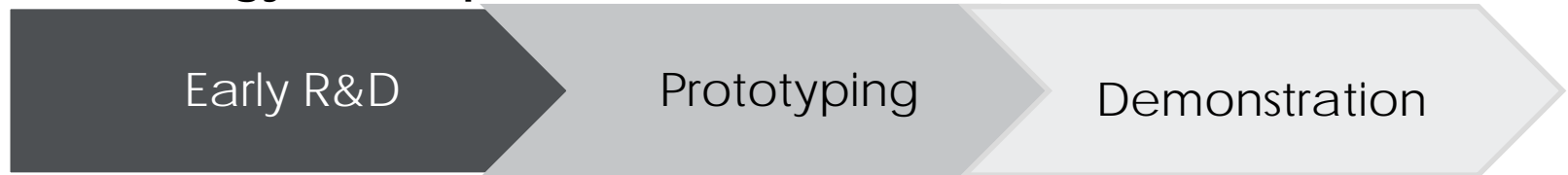
Key Activities for BENEFIT Teams



Cost-Performance Analysis

- ▶ **Expectations**
 - ▶ Customers do *not* expect a perfect cost model
 - ▶ Customers do need reason to believe value outweigh costs
- ▶ **Work in Phases as Technology Develops**

Technology Development



Cost-Performance Analysis



Economic Modeling for Technology

Full Company Financial Model

Cash flow, dynamics of ramping production and varying sales, investments timing

Similar information for other projects competing for resources

Production Cost Model

Determine resources required for at-scale production

Tabulate material/component flow, labor & energy use, equipment, etc

Basic Materials & Process

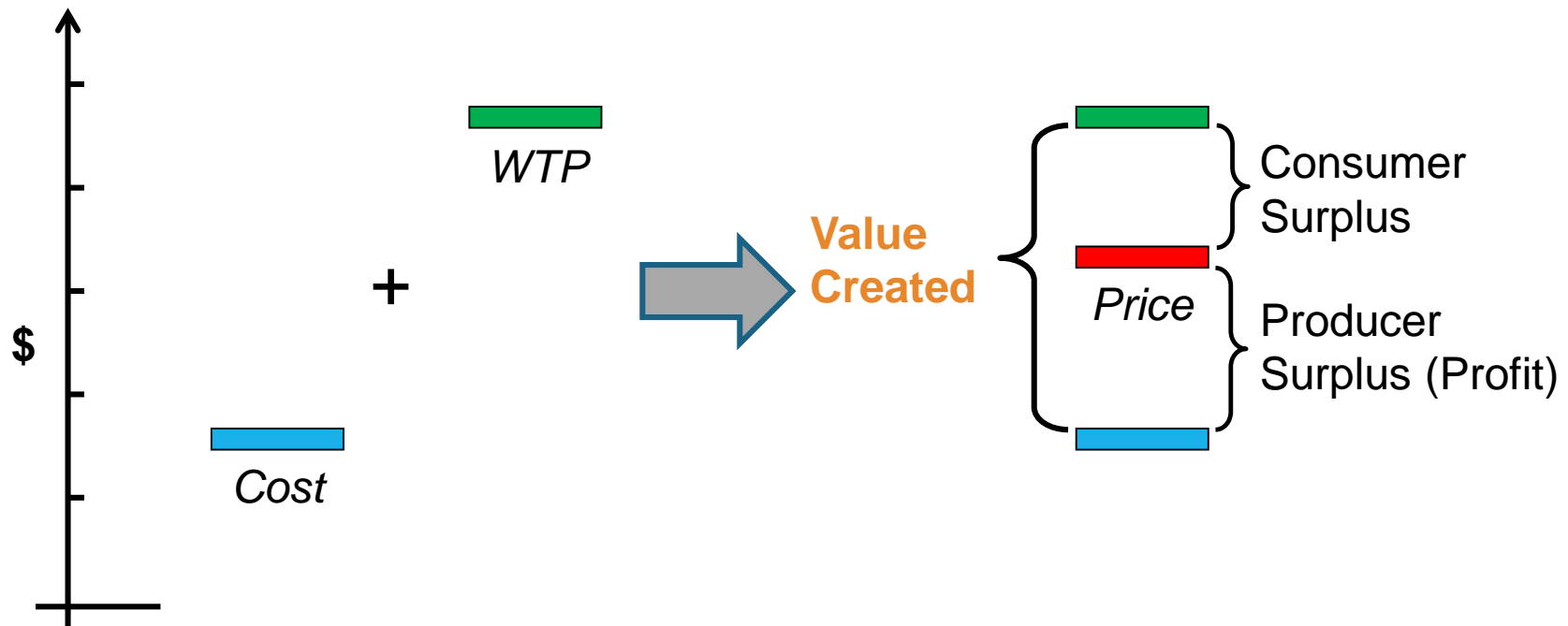
Bill of Materials (BOM) – list of “ingredients”

Simple block diagram of production steps

Cost & Value

- ▶ *Production cost* (necessary but not sufficient by itself)
+ *Willingness to pay* (customer value)

→ *Value creation* potential of product



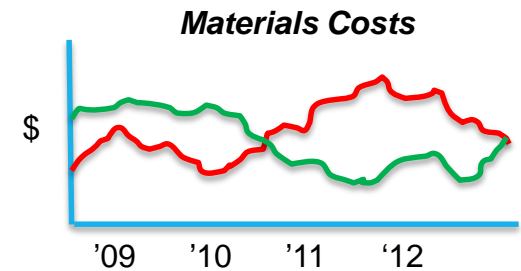
Cost Modeling Enables Research & Development

- ▶ Model integrates many variables/calculations together for holistic consideration

$$1+1 = 3$$



- ▶ Easily test scenarios / update with new cost information
- ▶ Communicate results with stakeholders
 - Internal: R&D, Management, Marketing
 - External: Investors, Customers



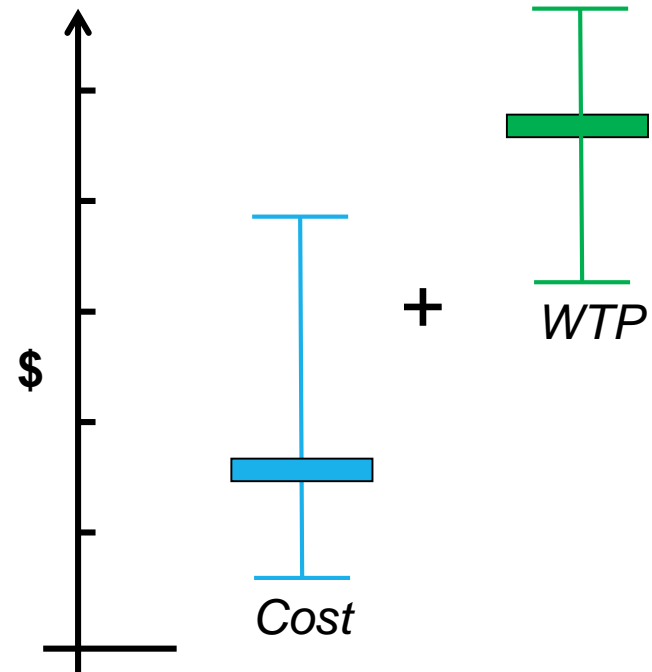
Modeling Benefits, Despite Uncertainty

▶ Common concerns:

“too early!!There is too much uncertainty to calculate exactly how profitable this company/product would be.”

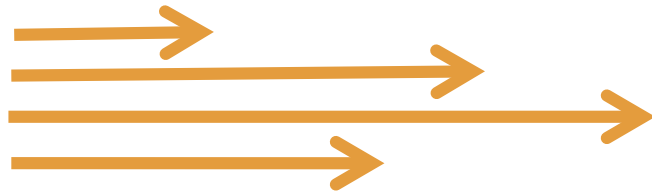
▶ Modeling still beneficial:

- **Make uncertainties explicit**
- **Identify most valuable improvements**
- Develop targets, metrics
- Bound with theoretical limits
- Create thought framework for reducing uncertainties



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