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# Staying Ahead of Disruptions By Creating Your Own Emerging Technologies Radar

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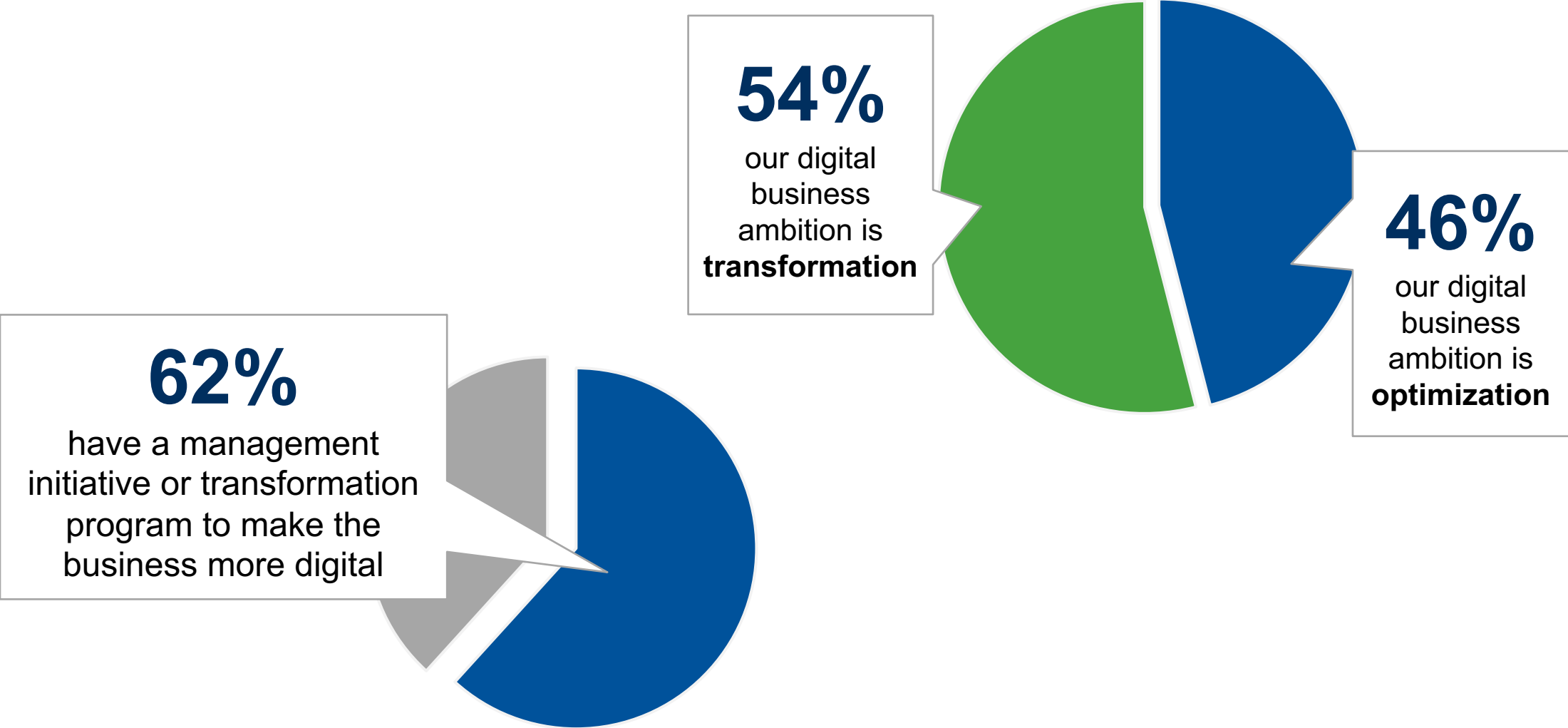
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Between 2018 and 2020

CEOs said that they  
are likely to change  
their business models

63%

# Digital Innovation “Matters” to CEOs



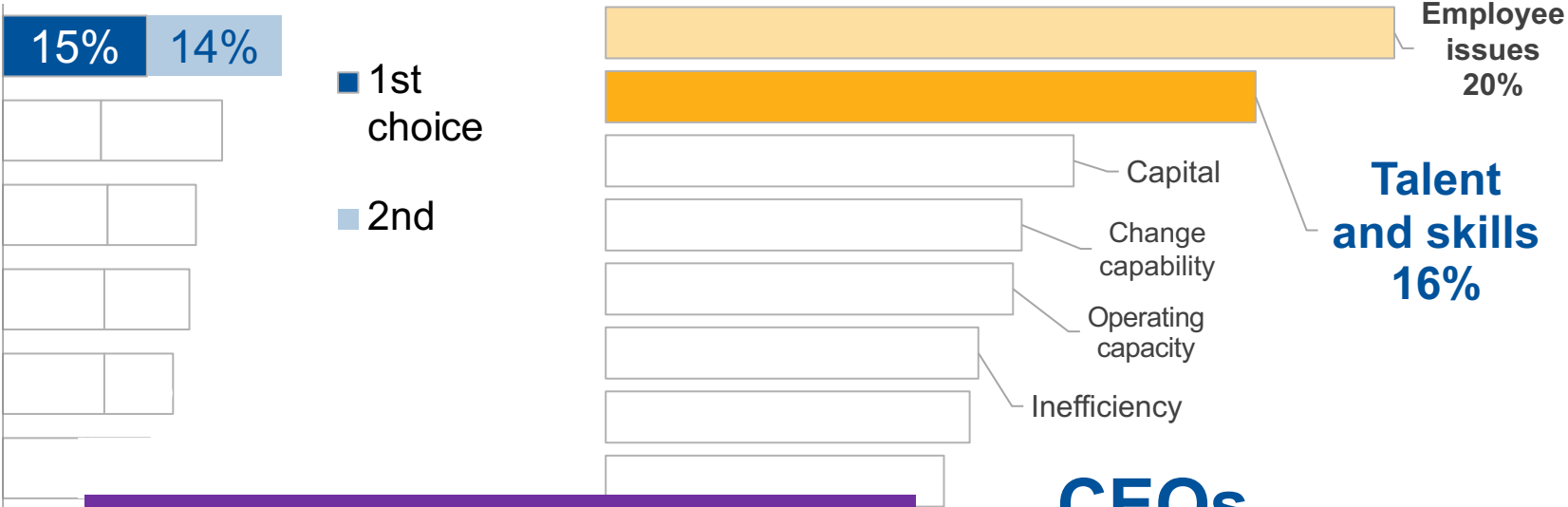
Base: All respondents, n = 460

"Please tell us about your organization's top 3 strategic business priorities for the next 2 years (2018 and 2019)"

Percentage of respondents — ranked by summary top 3 mentions

# CIOs Must Address the CEOs' Top Obstacle

Lack of talent and capability in workforce  
Digital business cyber risks  
Age/Inflexibility of technology assets  
Lack of investment funding



CEOs Top Digital Business Progress Inhibitors

Which of the following are the two biggest inhibitors to your company's digital business initiative progress?

CEOs Top Constraints to Business Growth

(Internal Factors)

What are the two most significant external/internal factors acting as constraints on your company's growth?



# CIOs Must Scan the Market for Technology Innovation as a Business Enabler

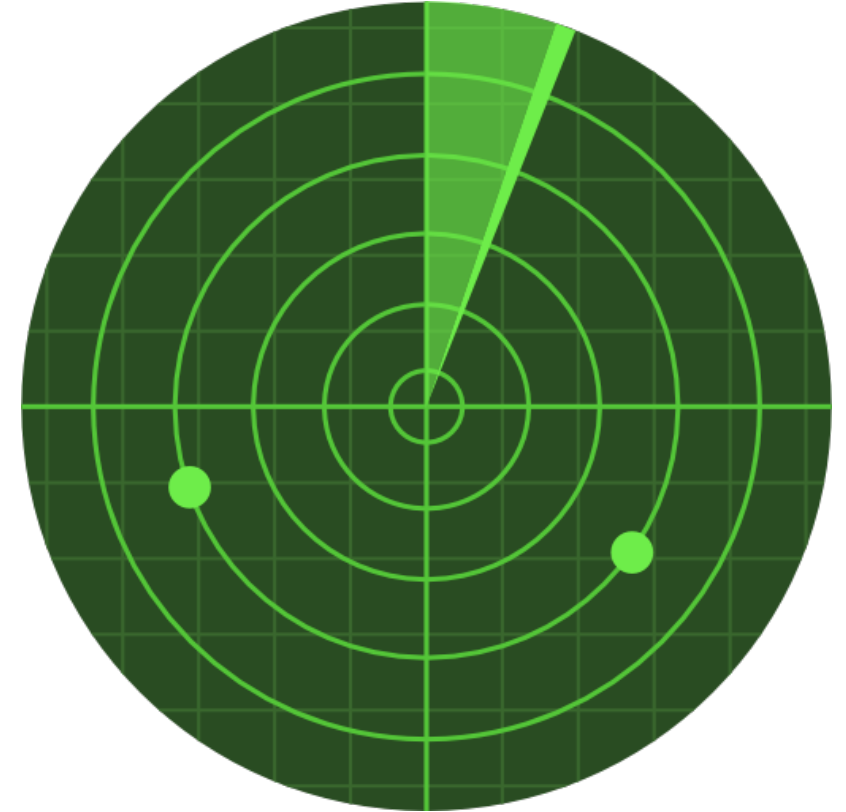
Digital business is driving a great wave of technology innovation. IT leaders must get in front of the business strategy curve by increasing their focus on technology innovation:

- **Stay ahead of the market with trendspotting:** Scan the horizon for emerging technologies that could disrupt or create new opportunities for your business.
- **Reimagine your business:** Use emerging technologies as inspiration to provide deep insights into optimizing or creating new business models that drive competitive advantage through innovation.
- **The "futurist" advisor:** With the rapid pace of emerging technologies, there are more questions than answers. The enterprise architect has an opportunity to be the advisor with answers to those complex questions.
- **Skill up:** Developing and enhancing EA skills and competencies with innovation, emotional intelligence, and design thinking enable an EA program to be successful in the age of disruption.

# What's an Emerging Technology Radar?

# Emerging Technology Radar

A tailored tool used to visualize **high-urgency, emerging technologies** that create a **transformative impact** on the future of the **company**.



# An Emerging Technology Radar Is...

1

**Early Warning System.** Easy to consume high-impact visual of the emerging technologies that may pose the greatest impact to your organization.



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**Flexible and Stylized.** A tailored visual for business and technology leaders that aids in bringing new insights and fostering decision making.

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**Flexible and Stylized.** A tailored visual for business and technology leaders that aids in brining new insights and fostering decision making.

3

**Always Up-to-Date.** Radars should be a "living" diagnostic tool that is continuously being updated with the latest market intelligence.

# An Emerging Technology Radar Is...

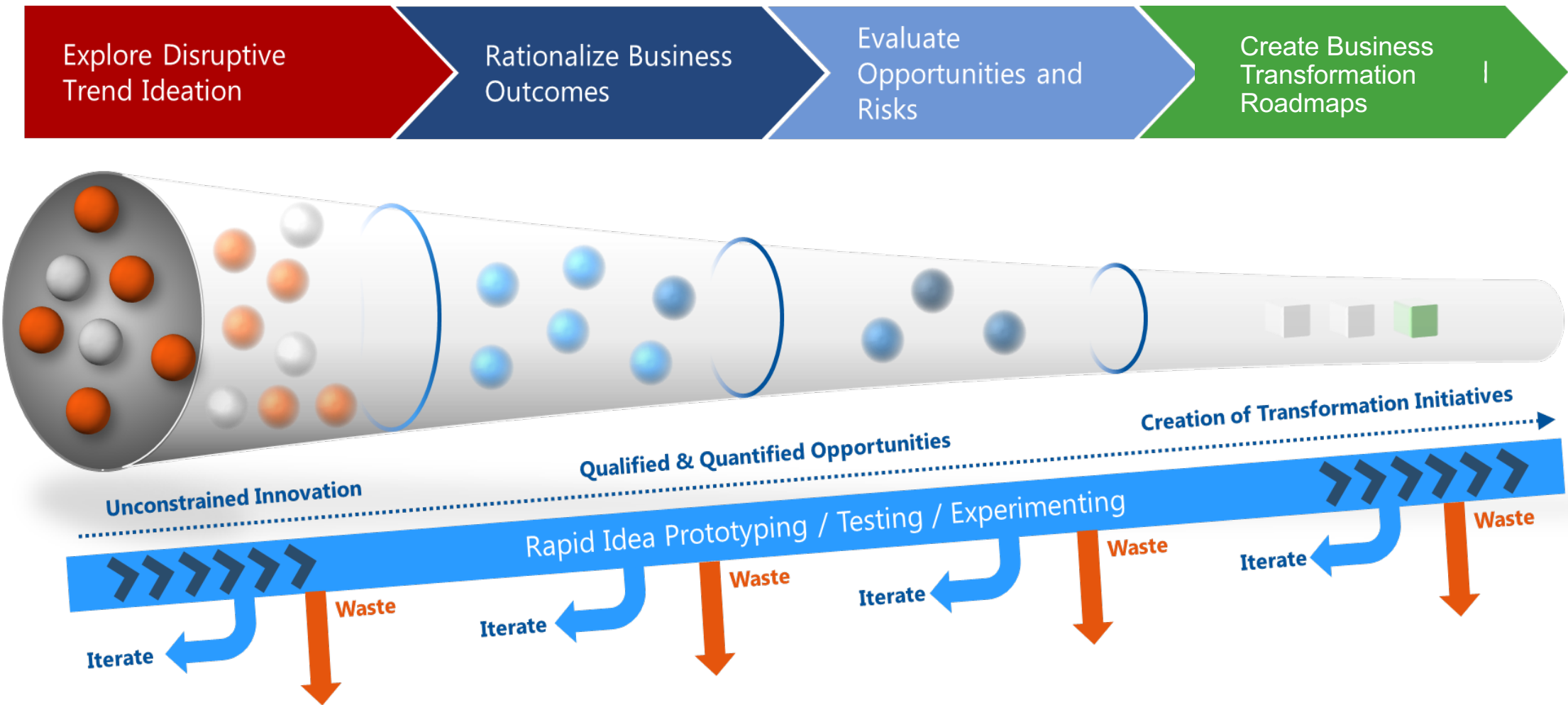
- |   |                                                                                                                                                              |
|---|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
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| 3 | <b>Always Up-to-Date.</b> Radars should be a "living" diagnostic tool that is continuously being updated with the latest market intelligence.                |
| 4 | <b>Focus on Business Value.</b> Keeps technology scouts in the mindset of always making sure that emerging technology fulfils what's strategically relevant. |

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2	<b>Flexible and Stylized.</b> A tailored visual for business and technology leaders that aids in brining new insights and fostering decision making.
3	<b>Always Up-to-Date.</b> Radars should be a "living" diagnostic tool that is continuously being updated with the latest market intelligence.
4	<b>Focus on Business Value.</b> Keeps technology scouts in the mindset of always making sure that emerging technology fulfils what's strategically relevant.
5	<b>More than a List.</b> Used as an analysis method to distill the applicable emerging technologies to the organization, not as a general technology or trend watchlist.

# How do You Use an Emerging Technology Radar?

# Use Radars to Inform Your Digital Transformation Journey



# Where Emerging Technology Radars Fit In

## Trend Identification and Insight Gathering Come First

1

### Explore Disruptive Trend Ideation

#### Trendspotting



Emerging Technologies  
Radar

Scan

Select & Analyze

Recommend

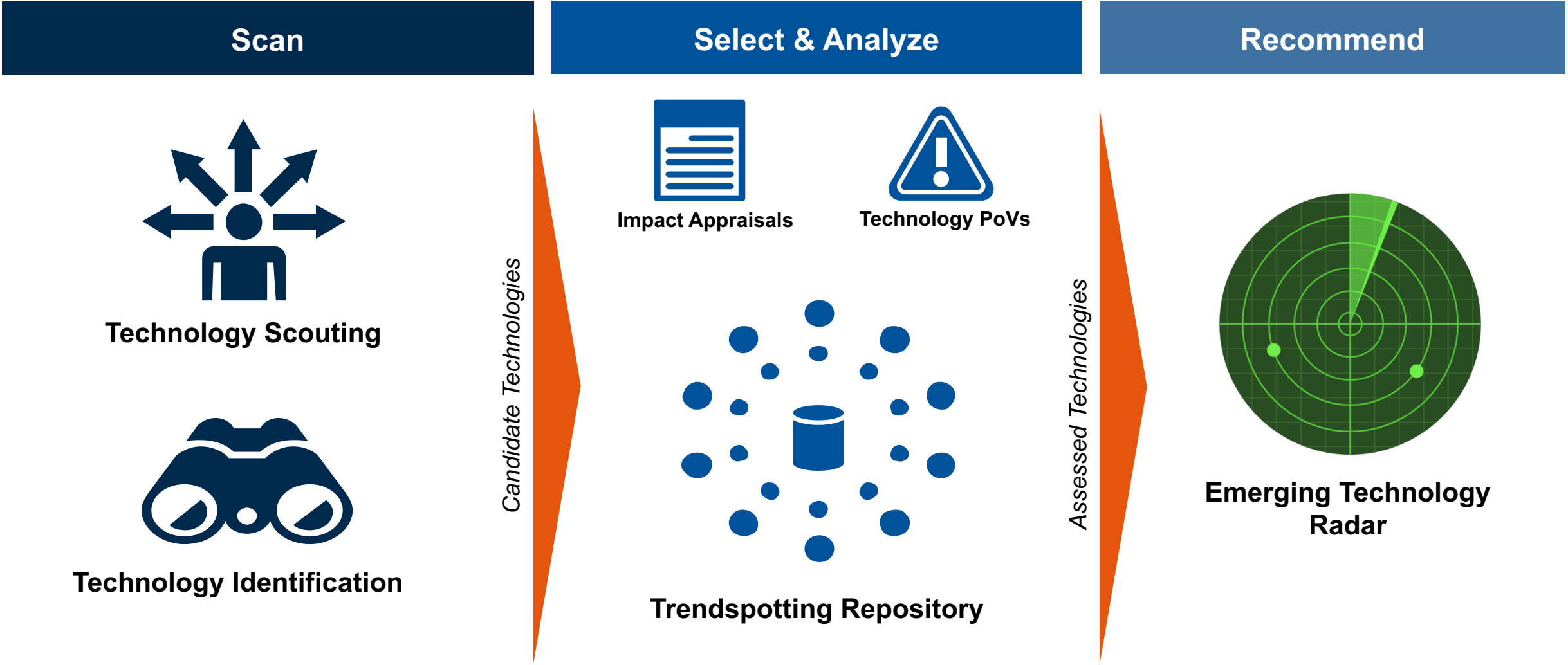
#### Ideation

Ideation Approaches,  
Deliverables and Best-Practice  
Research

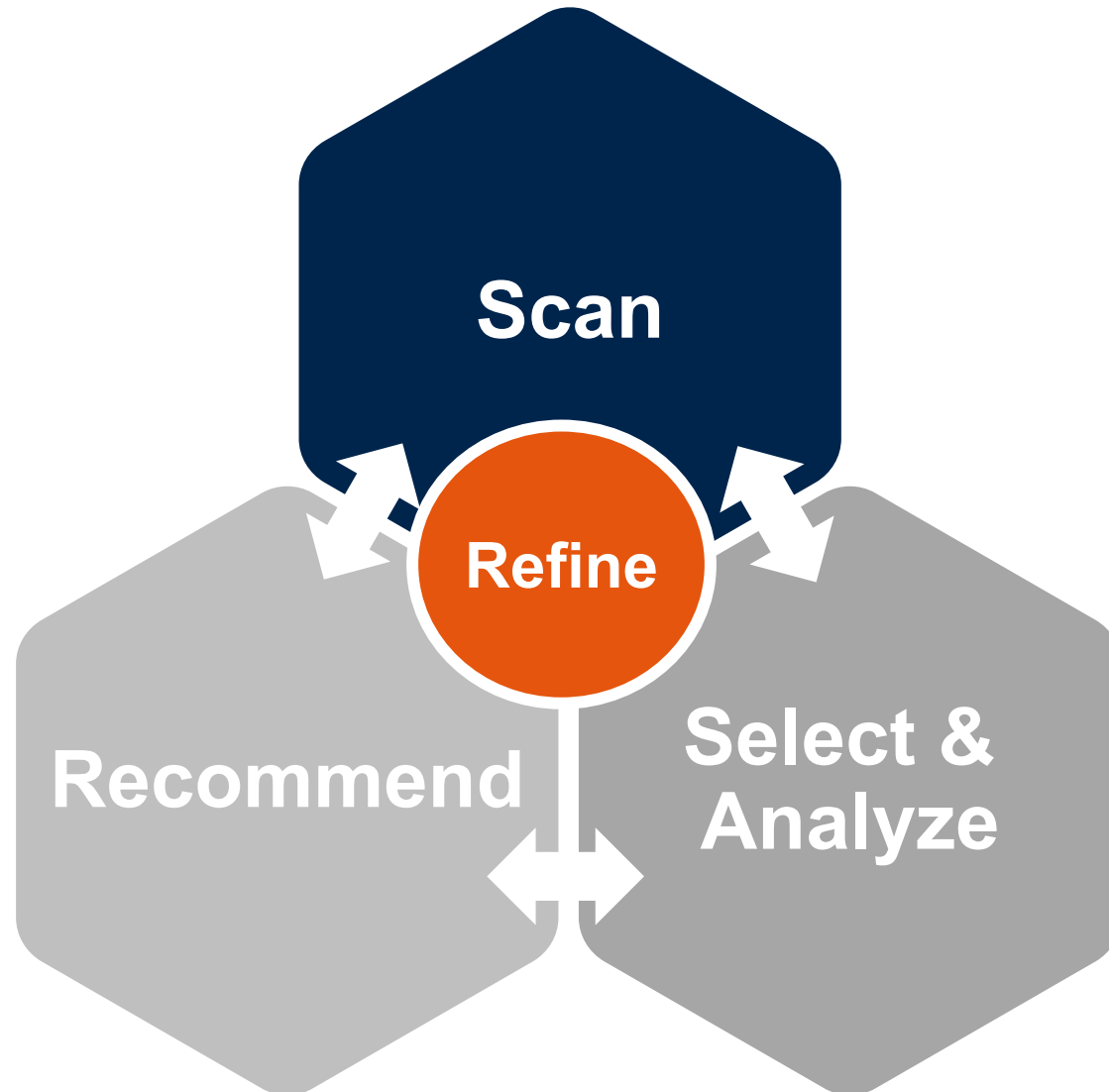
# How do You Create an Emerging Technology Radar?



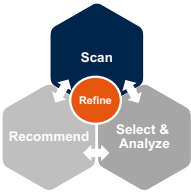
# Overview of Radar Creation




# Scan: Identifying Candidate Radar Technologies



# Scan: Identifying Candidate Radar Technologies





### Technology Scouts

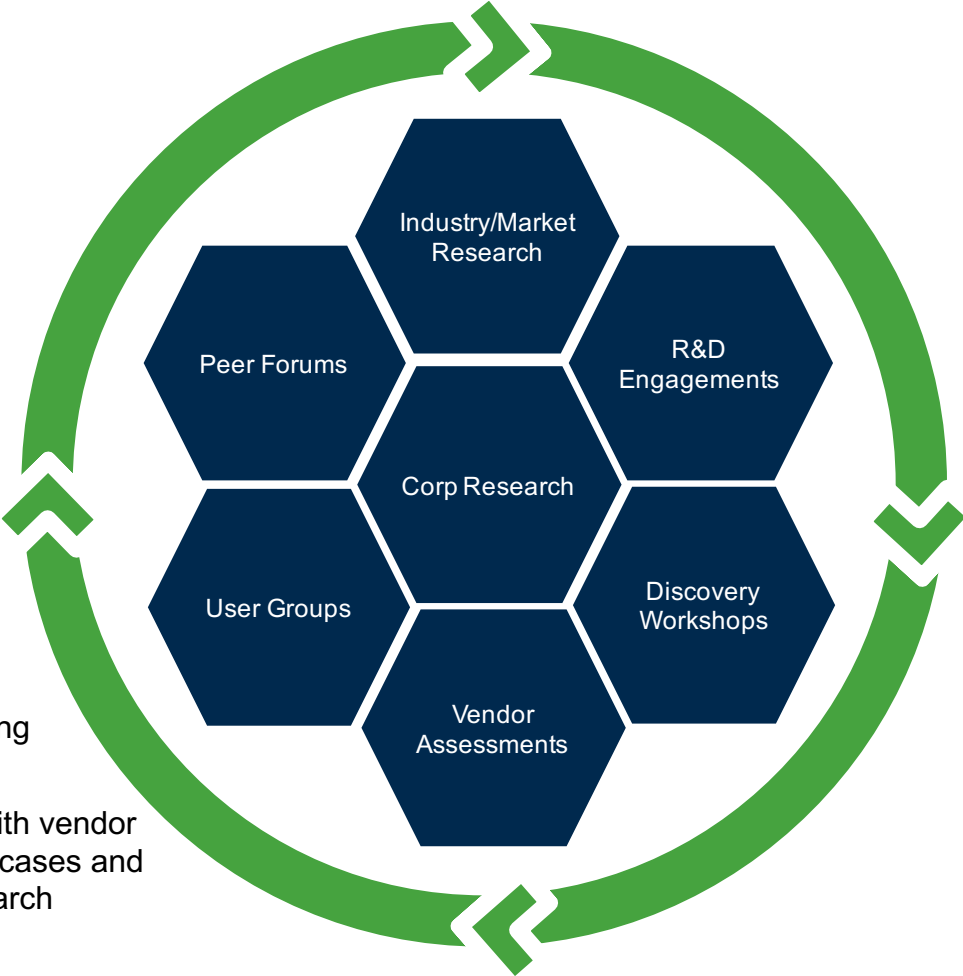
- Define activity scope
- Tailor approach
- Engage sources



### Curate Portfolio



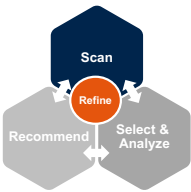
- Identify candidate emerging technologies and trends
- Associate technologies with vendor innovations, industry use cases and independent market research



***Recommendations & Candidate Technology Profiles***

***Investigate, Identify, & Triage Market Landscape***

# Scan: Identifying Candidate Radar Technologies



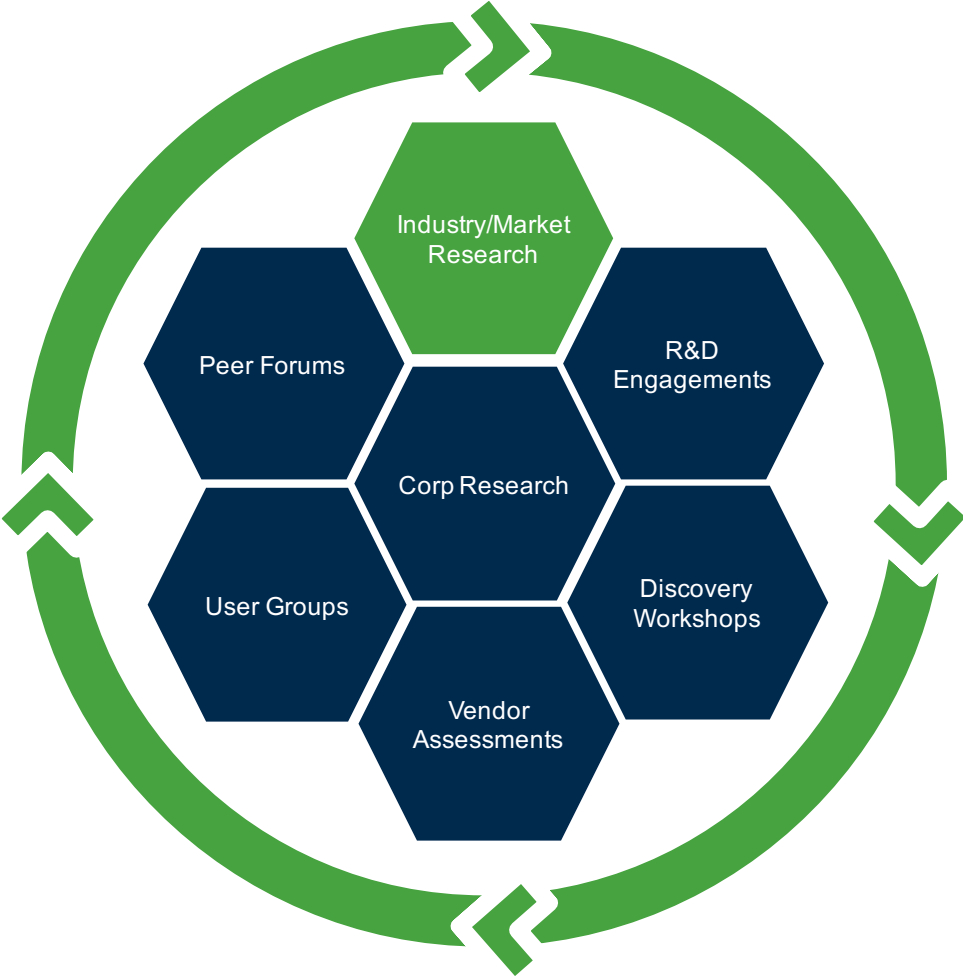
## Technology Scouts

- Define activity scope
- Tailor approach
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## Curate Portfolio

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*Investigate, Identify, & Triage  
Market Landscape*

## Gartner Industry Research

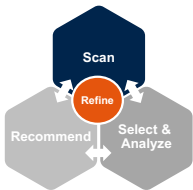
- Emerging Technology Hype Cycle
- Market Predictions
- Top 10 Strategic Trends Reports
- Cool Vendors Reports
- Maverick Research



*Recommendations & Candidate  
Technology Profiles*

# Identifying Candidate Radar Technologies

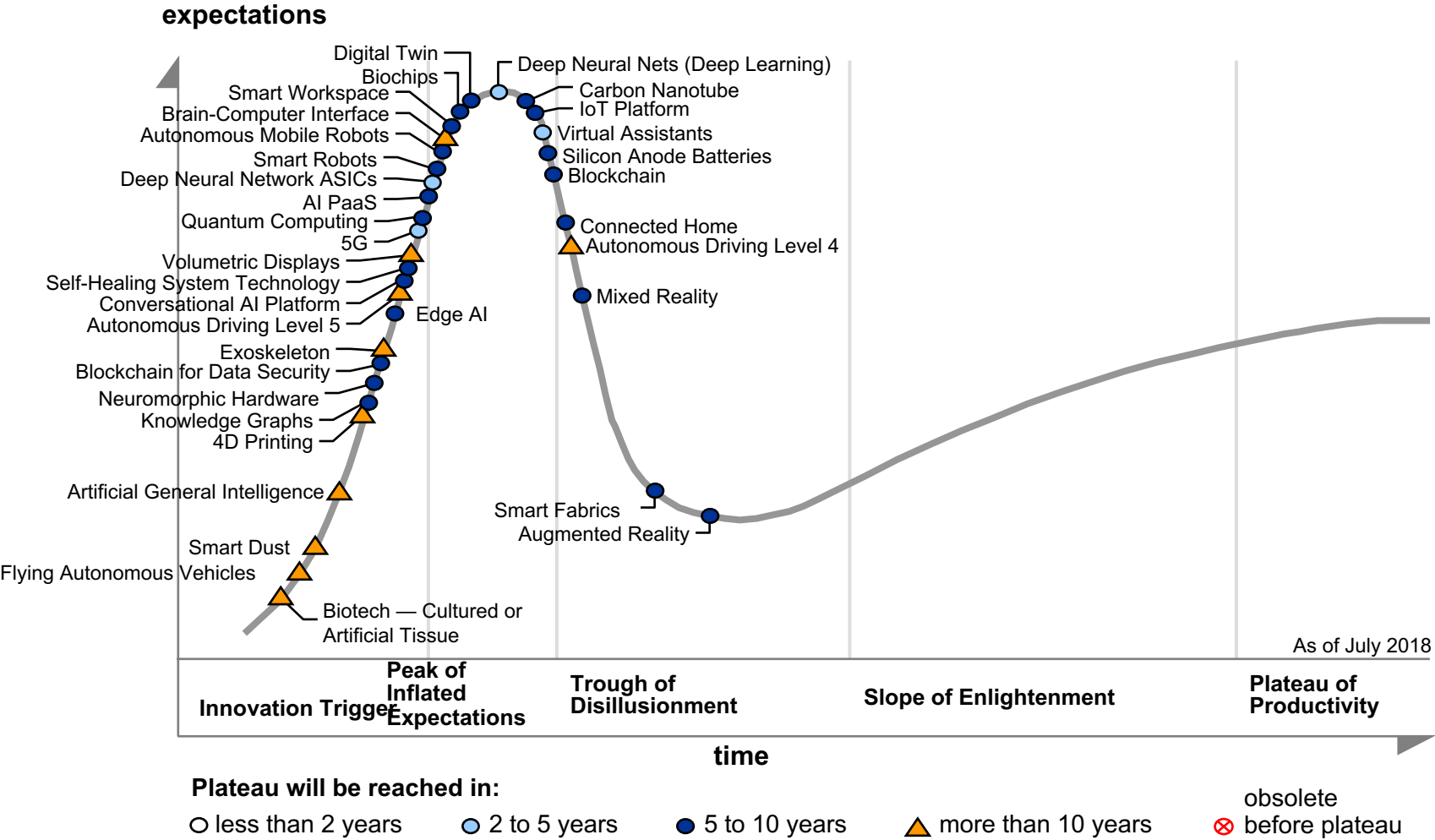
## Leverage Gartner Technology Profile Research



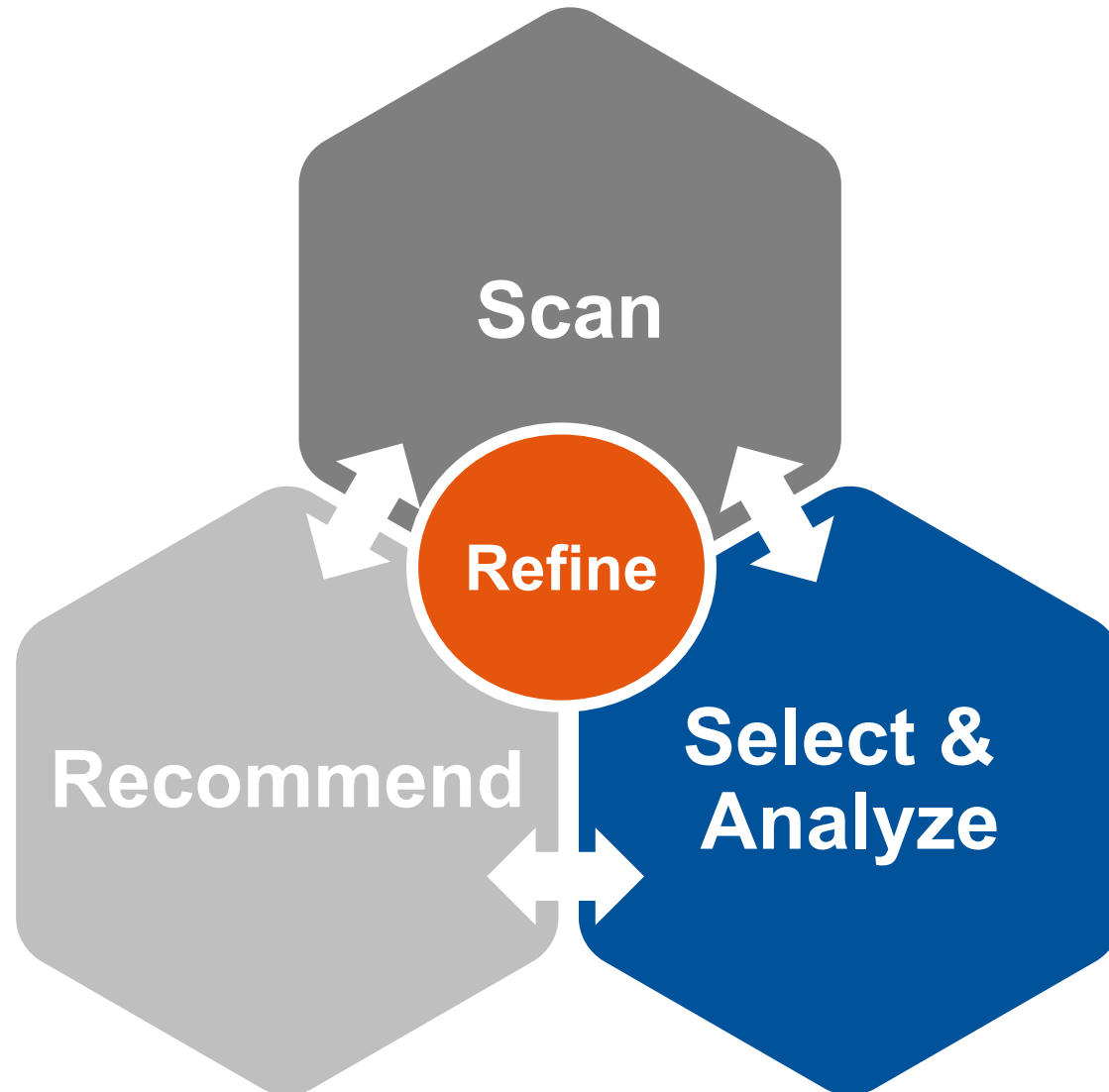
Technology Name	Market Context	Definition	Position	Time to Plateau	Position and Adoption Speed Justification
Connected Home	All Inclusive	A connected home is networked to enable	3.peak	3.Five to 10 years	The connected home is a concept that overarches several technologies,
Connected Personal Hearing Devices	All Inclusive	Connected personal hearing devices	5c.post-trough 15%	3.Five to 10 years	PHDs amplify sound, making speech intelligible for the wearer. Hearing-aid-
Connected TVs	All Inclusive	Connected TVs, also known as smart TVs,	6f.pre-plateau 20%	1.Less than two years	Almost 70% of TVs produced worldwide in 2016 were smart TVs, an upward
Consensus Mechanisms	All Inclusive	A consensus mechanism is a	2c.pre-peak 35%	2.Two to five years	The PoW (Proof of Work) was the consensus mechanism used by the first
Constrained Application Protocol	All Inclusive	The Constrained Application Protocol	2f.pre-peak 20%	2.Two to five years	CoAP uses an interaction model similar to the client/server model of HTTP, but
Consumer 3D Printing	Retail	Consumer 3D printing is the	3h.post-peak 40%	3.Five to 10 years	3D printing by consumers is an emerging market, but every home will
Consumer Energy Storage	All Inclusive	Consumer energy storage (as opposed	4.peak-trough midpoint	4.More than 10 years	The need to integrate consumer-owned renewable generation into delivery

# Scan: Identifying Candidate Radar Technologies

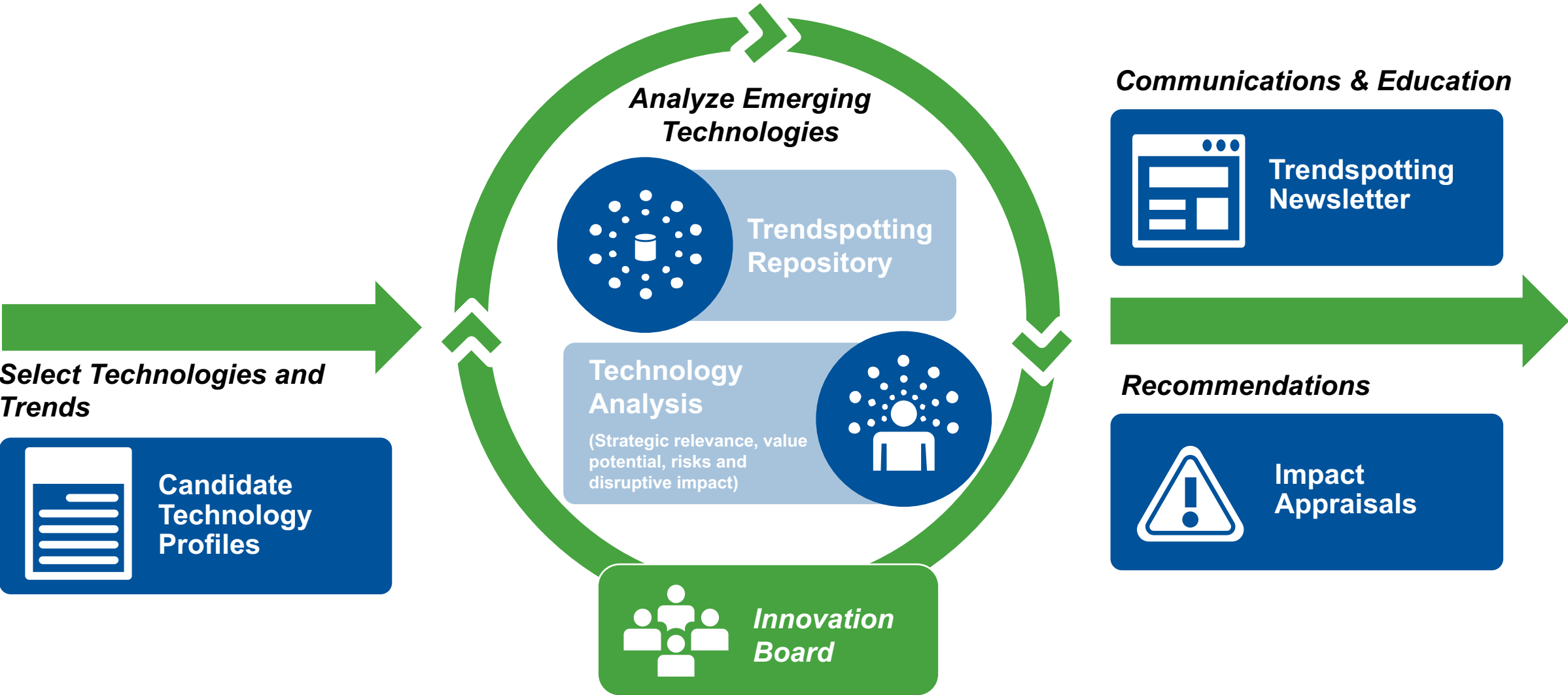
## Leverage Gartner Hype Cycle for Emerging Technologies



# Select & Analyze: Qualifying & Selecting Technologies



# Select & Analyze: Qualifying & Selecting Technologies





# Select & Analyze: Qualifying & Selecting Technologies

## Create Technology Profiles



Technology	<Enter Technology Name>		Recommendation	<input checked="" type="radio"/> Progress <input type="radio"/> Hold <input type="radio"/> Backlog	
Definition	<Insert a brief description of technology>				
Strengths and Opportunities		Business Scenarios		Risks	
<ul style="list-style-type: none"><li>...</li><li>...</li><li>...</li></ul>		<ul style="list-style-type: none"><li>...</li><li>...</li><li>...</li></ul>		<ul style="list-style-type: none"><li>...</li><li>...</li><li>...</li></ul>	
Business Feasibility		Value Potential to Company		Strategic Relevance	
<input type="radio"/> easy <input checked="" type="radio"/> medium <input type="radio"/> difficult		<input checked="" type="radio"/> high <input type="radio"/> medium <input type="radio"/> low		<input type="radio"/> low <input type="radio"/> medium <input checked="" type="radio"/> high	
Technology Maturity		Technology Maturity Velocity		Investment Required	
<input type="radio"/> low <input checked="" type="radio"/> moderate <input type="radio"/> high		<input checked="" type="radio"/> slow <input type="radio"/> average <input type="radio"/> rapid		<input type="radio"/> low <input type="radio"/> medium <input checked="" type="radio"/> high	
Vendors	<ul style="list-style-type: none"><li>...</li><li>...</li><li>...</li></ul>		Dependencies	<ul style="list-style-type: none"><li>...</li><li>...</li><li>...</li></ul>	

# Select & Analyze: Qualifying & Selecting Technologies

## Leverage a Priority Matrix to Put Technologies Into Context



benefit	years to mainstream adoption			
	less than 2 years	2 to 5 years	5 to 10 years	more than 10 years
transformational		Machine Learning	Blockchain Cognitive Expert Advisors Conversational User Interfaces IoT Platform Micro Data Centers Nanotube Electronics Personal Analytics Smart Data Discovery Smart Workspace Software-Defined Security Virtual Personal Assistants	4D Printing Autonomous Vehicles General-Purpose Machine Intelligence Human Augmentation Neuromorphic Hardware Smart Dust
high		Natural-Language Question Answering Software-Defined Anything (SDx)	802.11ax Augmented Reality Commercial UAVs (Drones) Connected Home Context Brokering Data Broker PaaS (dbrPaaS) Smart Robots	Quantum Computing
moderate			Affective Computing Gesture Control Devices Virtual Reality	Brain-Computer Interface Enterprise Taxonomy and Ontology Management Volumetric Displays
low				
As of July 2016				



### Overview

Emerging technologies are disruptive by nature, but the competitive advantage they provide is not yet well-known or proved in the market. However, most will take more than five to 10 years to reach the Plateau of Productivity. These examples illustrate the impact of key emerging technologies in the near term and the longer term.

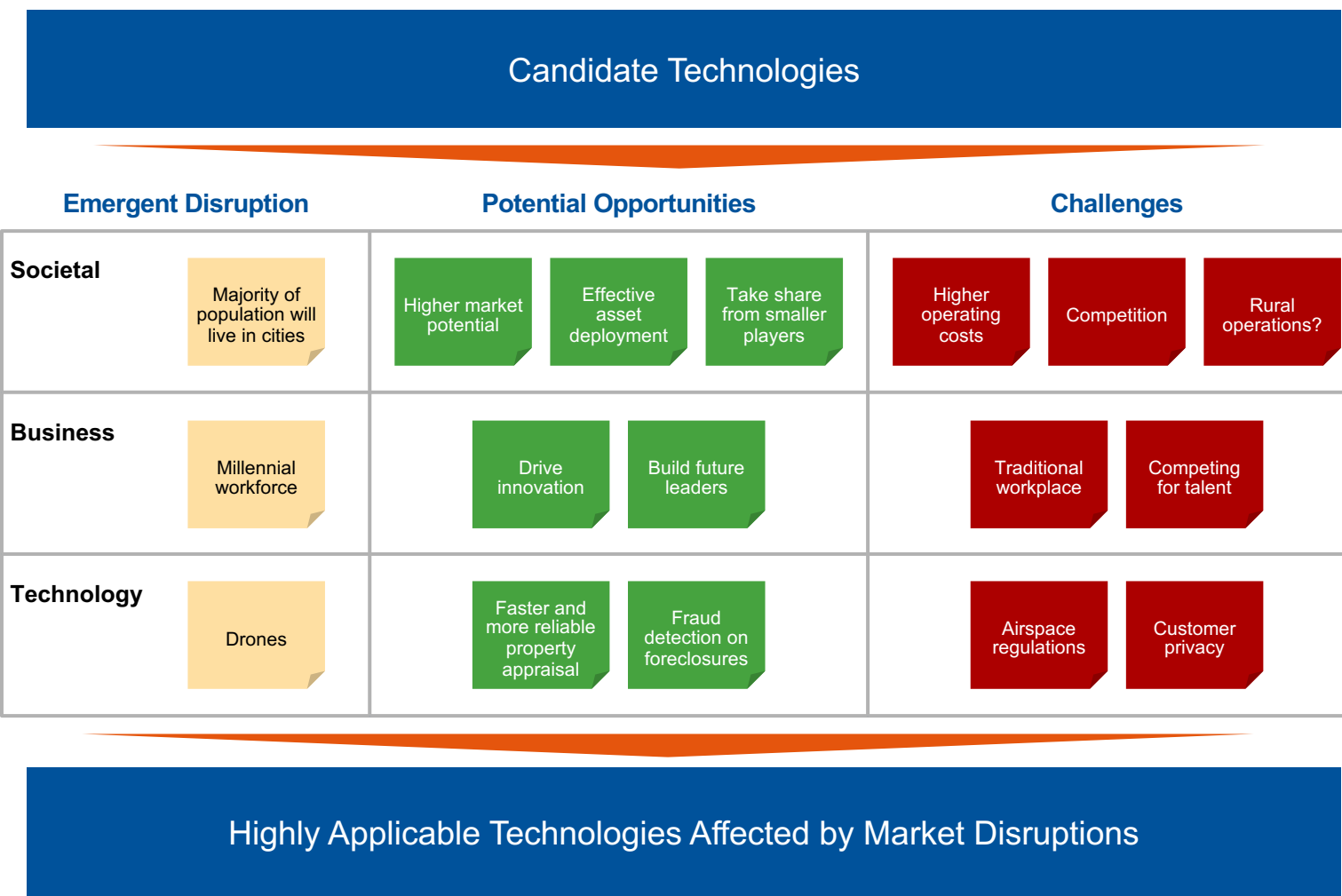
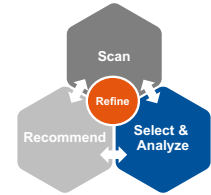


### Related Research

- ["Hype Cycle for Emerging Technologies, 2016"](#)

# Select & Analyze: Qualifying & Selecting Technologies

## Qualify Technologies by Assessing Their Opportunities and Threats

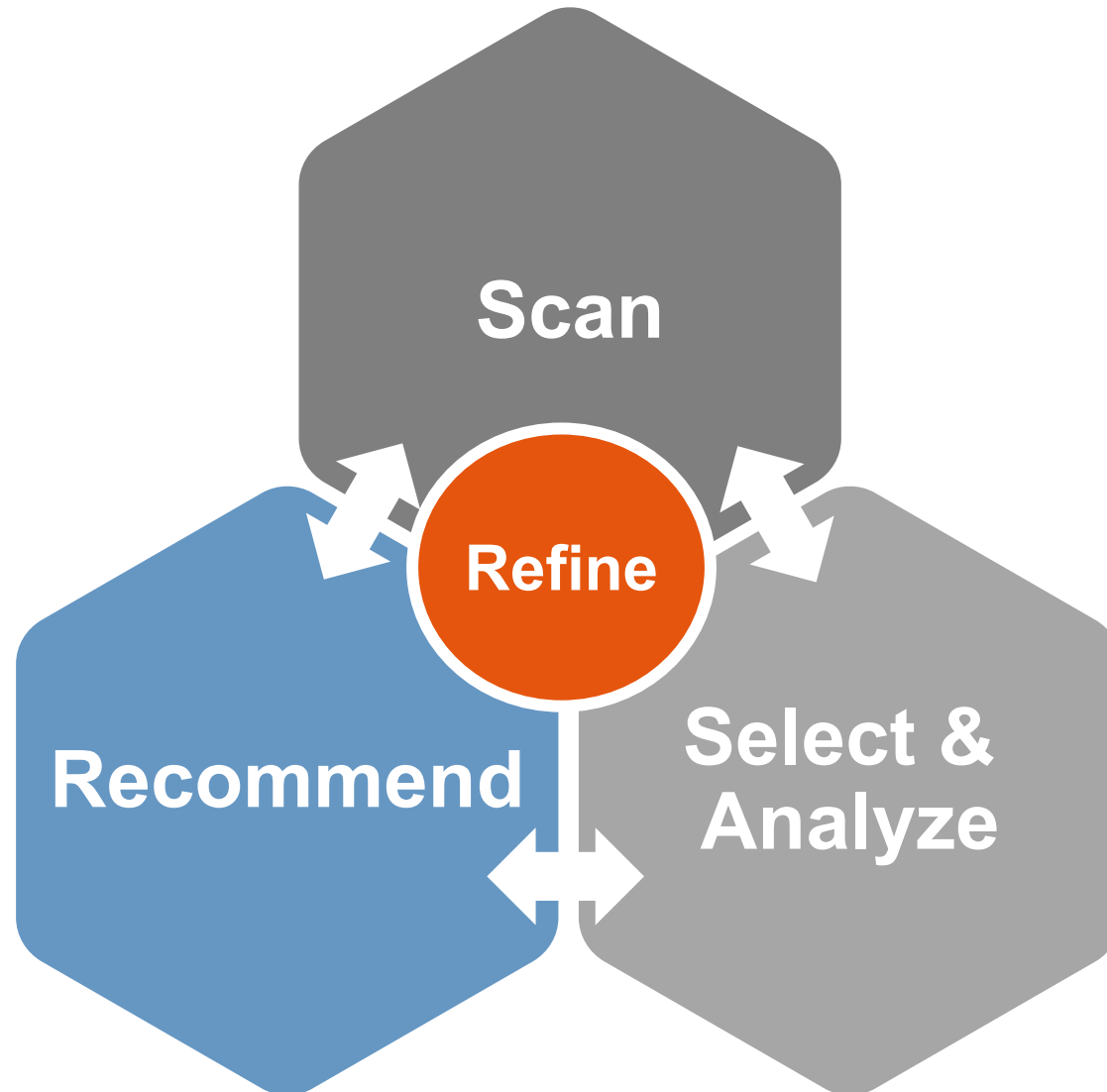


# Select & Analyze: Recommendations




- **Always put into context.** Use technology profiles to understand a technology's applicability to the company.
- **Analysis on priority technologies.** For each technology that qualifies for analysis develop and maintain a technology profile.
- **Pick the right analysis approach for the right result.** Pick the participants, engagement type and level of depth based on value potential and strategic relevance of the emerging technologies.
- **Engage business partners early and often.** Educate with technology profiles in community forums, 1:1s, or special sessions.
- **Comprehensive analysis.** Strategic relevance, value potential, risks and disruptive impact are a few aspects that are important.

# Recommend: Create Radar



# Recommend: Create Radar





Candidate  
Technology  
Profiles



Select Technologies and Trends



Market Business  
Scenarios



Emerging Technology Radar

Analyze Market Findings

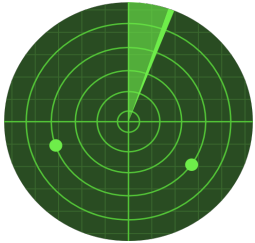
## Communications & Education



Trendspotting  
Newsletter



Quarterly Emerging  
Technologies Radar Publication



# Recommend: Steps to Create Radar



- 1. Establish workshop.** Gather technology scouts with other key business decision makers to use the candidate technologies to build the radar.
- 2. Analyze candidate technologies.** Facilitator uses a physical radar construct (large printout, whiteboard or easels) for participants to plot final candidate technologies with Post-it notes.
- 3. Iterate with rank and scoring.** Iterate to group, consolidate and remove technologies along with using a preferred method of evaluating the final technologies.
- 4. Postworkshop.** The final handwritten results are used to revise or create a new emerging technologies radar after the workshop.

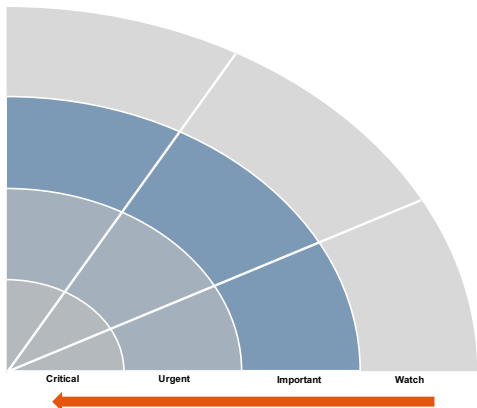
# Recommend: Component Overview

## Four Components of the Emerging Technology Radar



### Rings of Relevance

The radar has four rings. The nearest to the center is the most strategically relevant, and as the rings go out, the less relevant these technologies are to the company.



### Zones of Topics and Themes

Specific zones can be optionally defined based on generic technology relationships or meaningful zones to your business, such as strategic themes or major areas of business.



### Icons of Risk Factors

Pick easy-to-understand and simple icons to quickly convey meaningful data about these technologies. Simplicity is key because these icons should answer top-of-mind concerns for your stakeholders. Below are some examples of common icons:

- High Regulatory Impact
- Ethical/Social/Readiness
- Competitive/Monetary

### Blips of Technology Value Potential

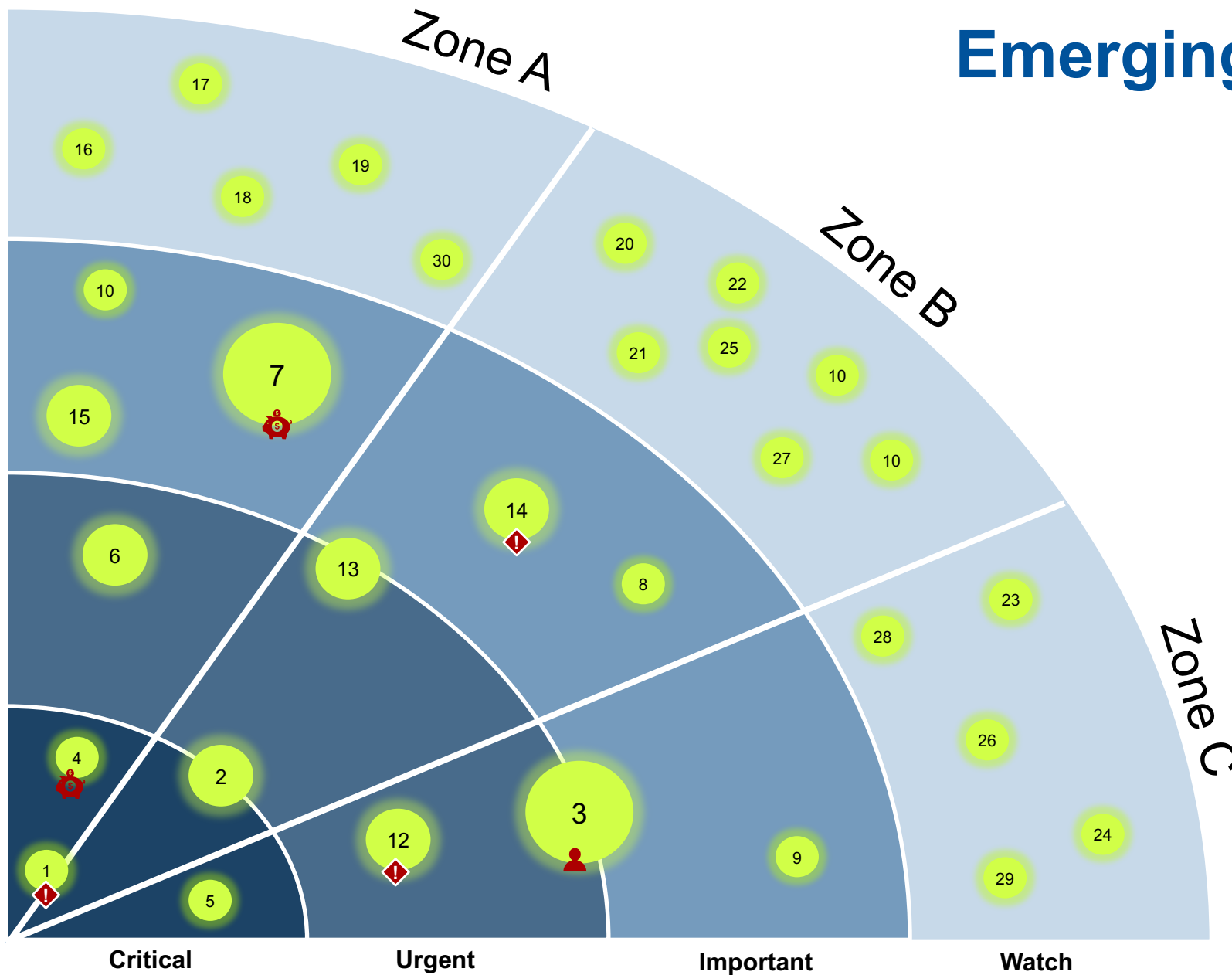
Continuing with the radar theme, "blips" are the specific emerging technologies. Size denotes the level of anticipated value potential of a given emerging technology. This isn't an absolute but an educated hypothesis based on analysis.

- Transformational
- High
- Moderate



# Emerging Technologies Radar

## FY18 Q01



### Must-Watch Technologies

- |                                         |                                |
|-----------------------------------------|--------------------------------|
| 1 Human Augmentation                    | 16 Brain-Computer Interface    |
| 2 4D Printing                           | 17 Commercial UAVs (Drones)    |
| 3 Virtual Assistants                    | 18 Volumetric Displays         |
| 4 Autonomous Vehicles                   | 19 Nanotube Electronics        |
| 5 Cognitive Expert Advisors             | 20 5G                          |
| 6 Smart Dust                            | 21 Neuromorphic Hardware       |
| 7 Commercial UAVs (Drones)              | 22 IoT Platform                |
| 8 Blockchain                            | 23 Digital Twin                |
| 9 Neuromorphic Hardware                 | 24 Quantum Computing           |
| 10 General-Purpose Machine Intelligence | 25 Software-Defined Security   |
| 11 Deep Reinforcement Learning          | 26 Edge Computing              |
| 12 Deep Learning                        | 27 Serverless PaaS             |
| 13 Augmented Reality                    | 28 Machine Learning            |
| 14 Virtual Reality                      | 29 Natural-Language Processing |
| 15 Wearable Technology                  | 30 Cognitive Computing         |

### Impact Potential

- Transformational
- High
- Moderate

### Risk Factors

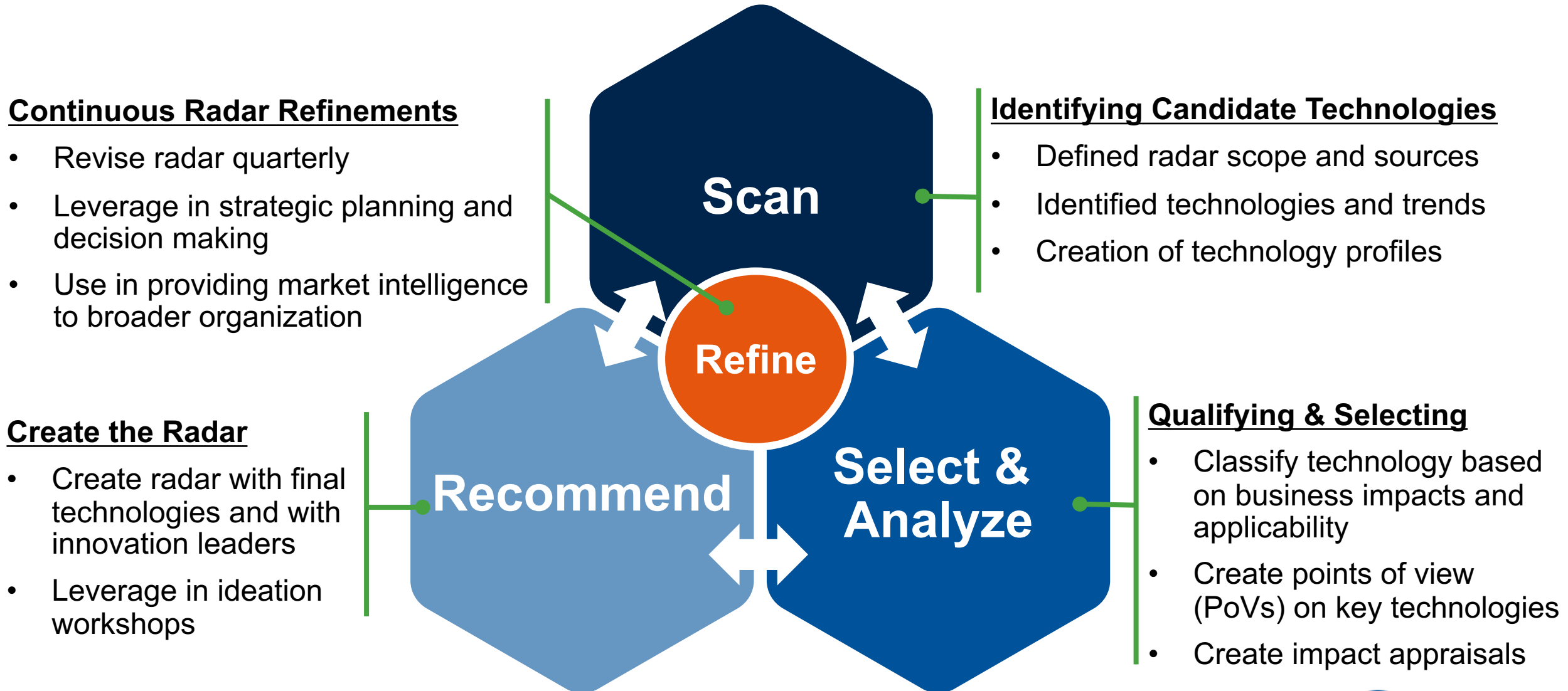
- High Regulatory Impact
- Ethical/Social/Readiness
- Competitive/Monetary

# Radar Recommendations



- **Use what works for you.** Find the right methods that fit the culture of the company rather than a prescriptive approach. Building an emerging technologies radar is a creative process and isn't meant to be created in only one way.
- **Stay up-to-date.** Innovation leadership team validates, prioritizes and nominates candidate emerging technologies monthly.
- **Keep the technology out.** To foster better idea generation, use manual methods including whiteboards, easels and Post-it notes.
- **Frequent refinements.** Consider publishing your emerging technologies radar on a quarterly or biannual basis.
- **Break into small working teams.** Smaller working teams of two to three often enable better collaboration and yield higher results.

# Wrap-Up: How Radars Fit Into Trendspotting





# Thank You!

# Author



**Mike J. Walker**  
Research Director

[More Info](#)

## My Latest Research

- [Emerging Technology Hype Cycle, 2017](#)
- [Top 10 Strategic Technology Trends for 2017](#)
- [Information of Everything](#)
- [Advanced Machine Learning](#)
- [Autonomous Agents and Things](#)
- [Advanced System Architecture](#)
- [Vanguard Enterprise Architects Will Lead Bimodal Mode 2 Innovations](#)
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