

2018
Growth Strategies in
Digitalization and
Technologies



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Two cases of market digitalization and an example of going to market strategy

- IoT Servitization – Shift from selling product to selling services
- Lithium Batteries – A new Industry at the horizon, what to do?
- Going to Market Strategy – Which market segments to target?

Case 1: Industrial IoT Servitization – Opportunities and challenges

Industrial IoT Servitisation – The new business model

“Industrial companies are in the information business whether they want to be or not.”
Jeff Immelt, Former CEO of GE

Shift of business from selling product to selling services

- New service models = new revenue streams and closer ties with customers
- Shift from CapEx to OpEx spend
- Revenues shared across an ecosystem of partners

IIoT servitization implemented across industries



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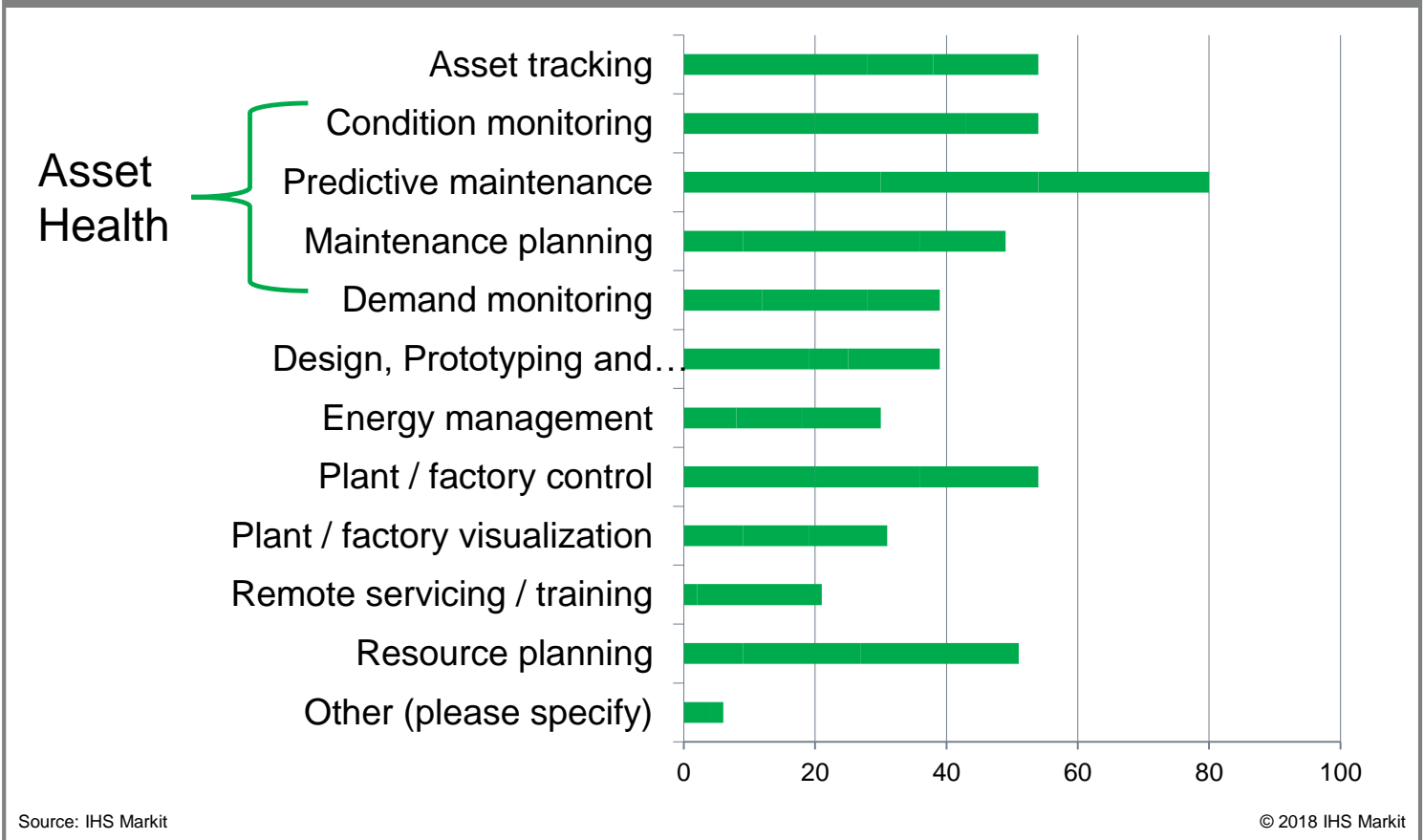
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How will Industrial IoT be used?

- Asset related analytics provide low hanging fruit
- Application focus varies by vendor
- 50% of users prioritize as a benefit
 - Improved productivity or
 - Reduced downtime

Which applications will benefit most from your companies use of Industrial IoT?



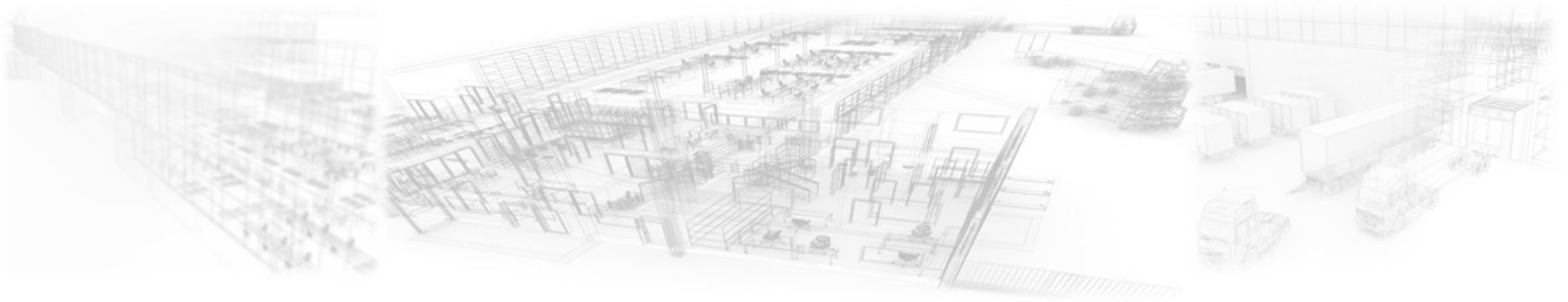
How IIoT is influencing the product lifecycle

Design

Operations

Maintenance

Supply Chain



How IIoT is influencing the product lifecycle

Design

- **Harley-Davidson**
Reduced model New Product Introduction (NPI) from more than a year to 1.5 weeks
- **Maserati**
Reduced number of prototypes and time to market, resulting in 30% less development time

Operations

- **Petroflow Energy Corp.**
Site power consumption reduced by 43%
- **Jabil**
Reduced scrap by 15% and energy consumption by 10%

Maintenance

- **Fanuc**
Saved US\$2M from reduced downtime
- **Nova Chemicals**
Reactive emergency work reduced by 47% and time spent on proactive, preventative maintenance has increased by 61%

Supply Chain

- **Sandvik Coromant**
Monitors existence of any bottlenecks in the overall supply chain
- **Shanghai CHILO Press Company**
Inventory error rate reduced from 50% to 4%

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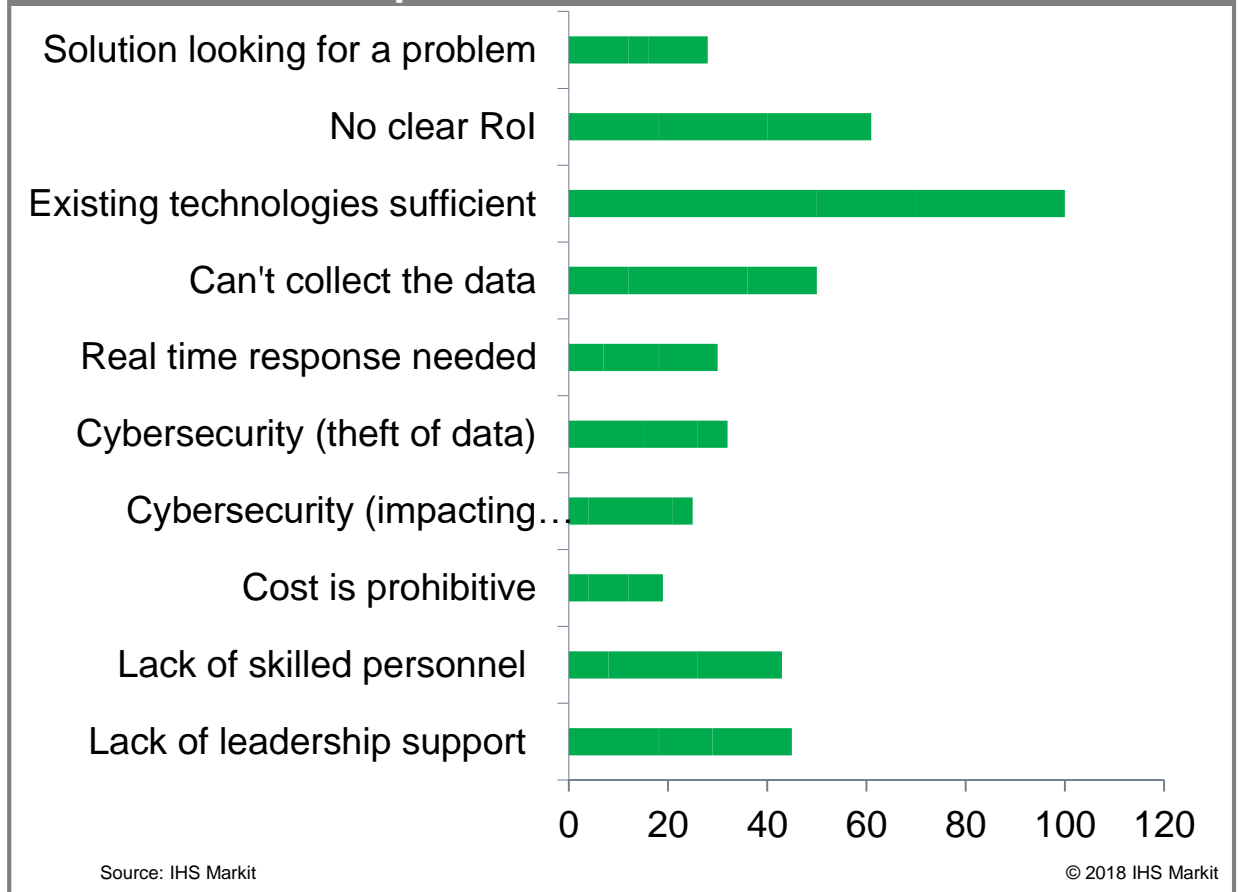
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What is slowing us down?

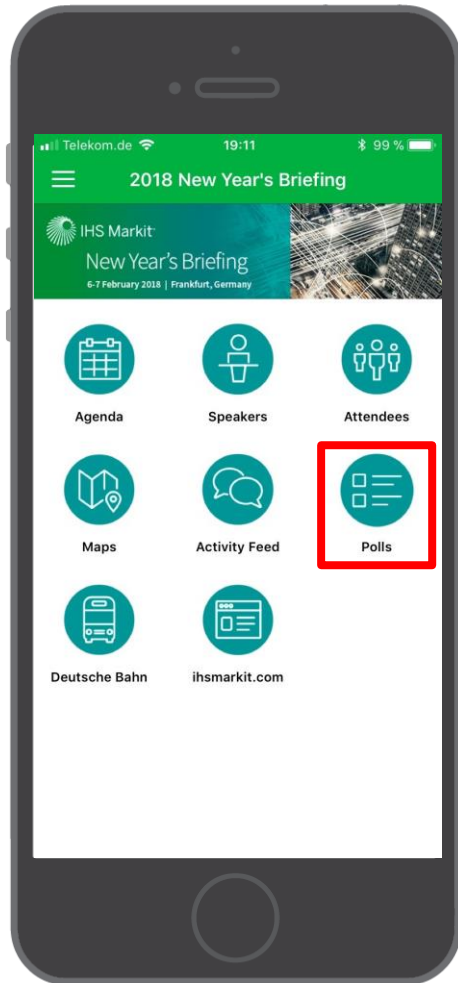
What companies are saying:

- “We will never allow third parties to host our data”
- “This is just marketing language for technologies we are already using”
- “We would like to, but do not have the ability to collect the data or people to make sense of it”

What are the reasons your company is not using the Cloud and has no plans to do so?



POLL QUESTION!



What impact do you expect digital transformation will have on your business in 2018?

- Significant impact on business models with customers
- Negligible impact on business models with customers
- Significant impact on production processes
- Negligible impact on production processes
- Significant impact on both business models and production
- Negligible impact on both business models and production

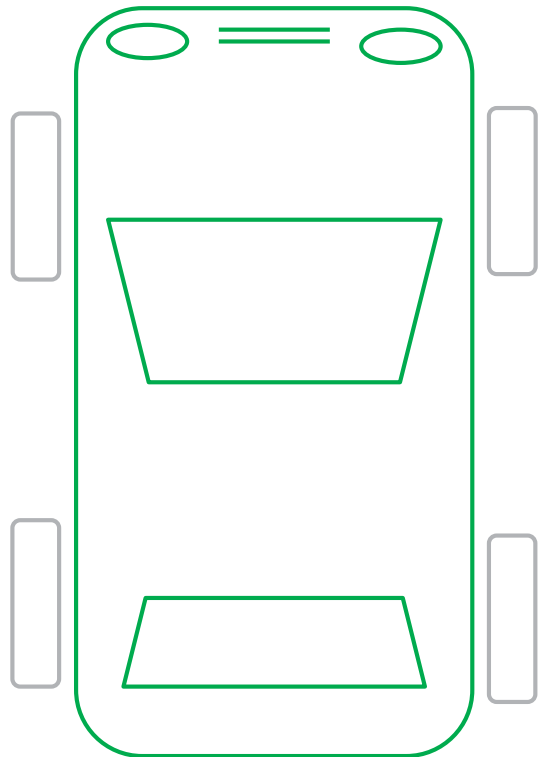
Access this poll on the event app!

<https://api.cvent.com/polling/v1/api/polls/sp-sw0zq6>

Case 2: Lithium Batteries – A new Industry at the horizon, what to do?

What carmakers view as a connected autonomous vehicle, IT companies view as a personal assistant that can drive you around

From engine-driven to software-driven, literally



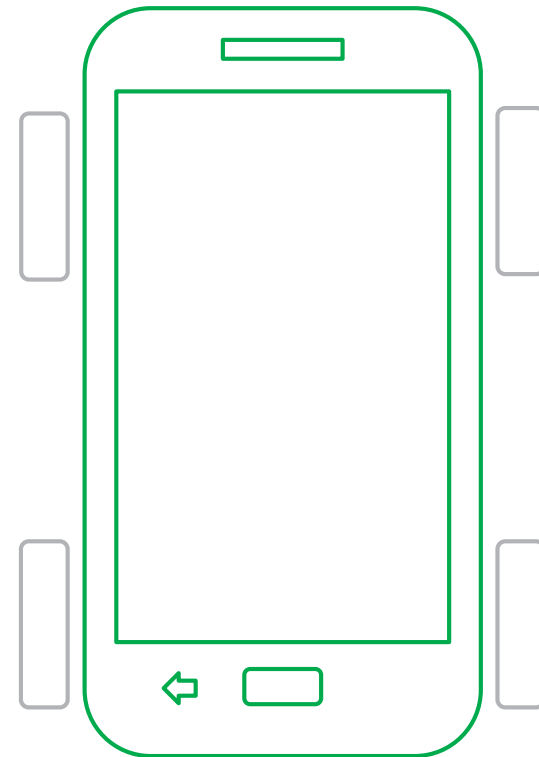
1st step: Get the car hooked on digital
done



2nd step: Overhaul the analog core
In progress



Final step: Software-centric
>2025



Our focus in this brief

Source: IHS Markit

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A new industry on the horizon: The rush to produce lithium batteries is on

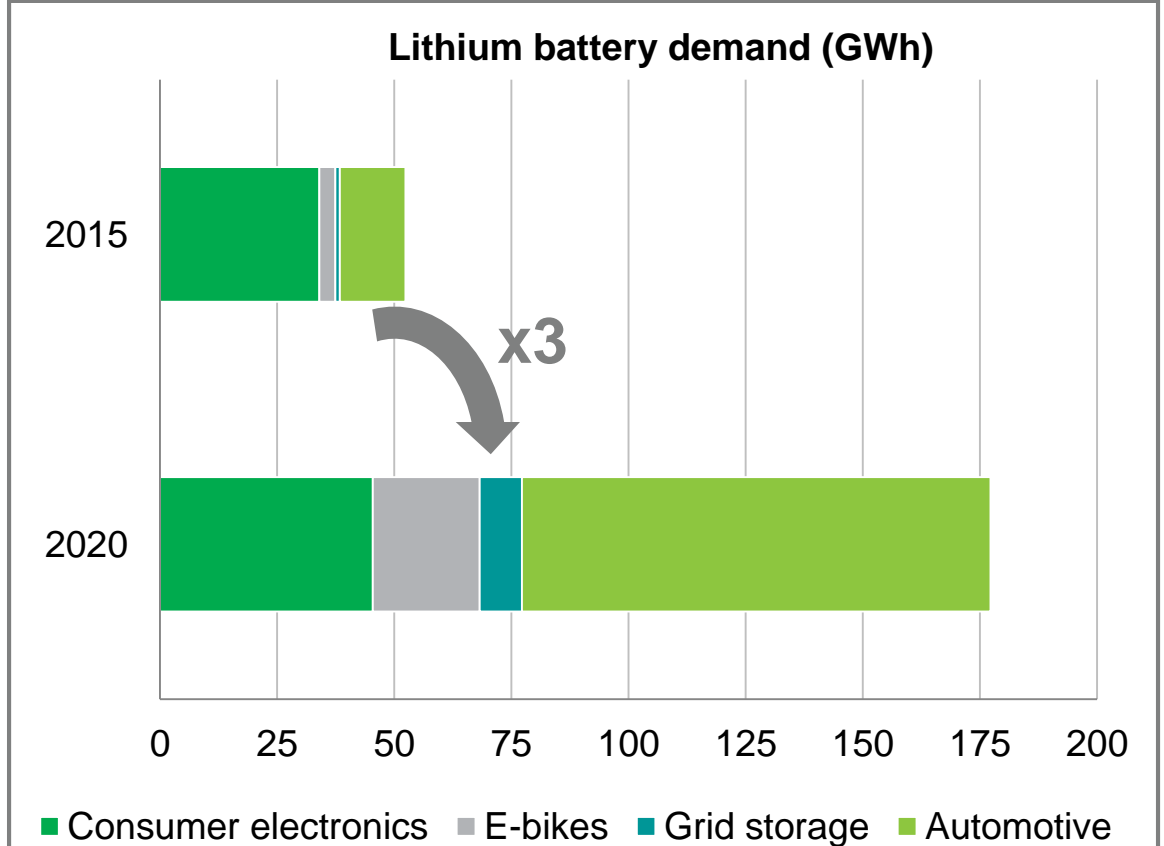
1859: First oil rush starts, Pennsylvania



Source: Wikipedia, historic picture

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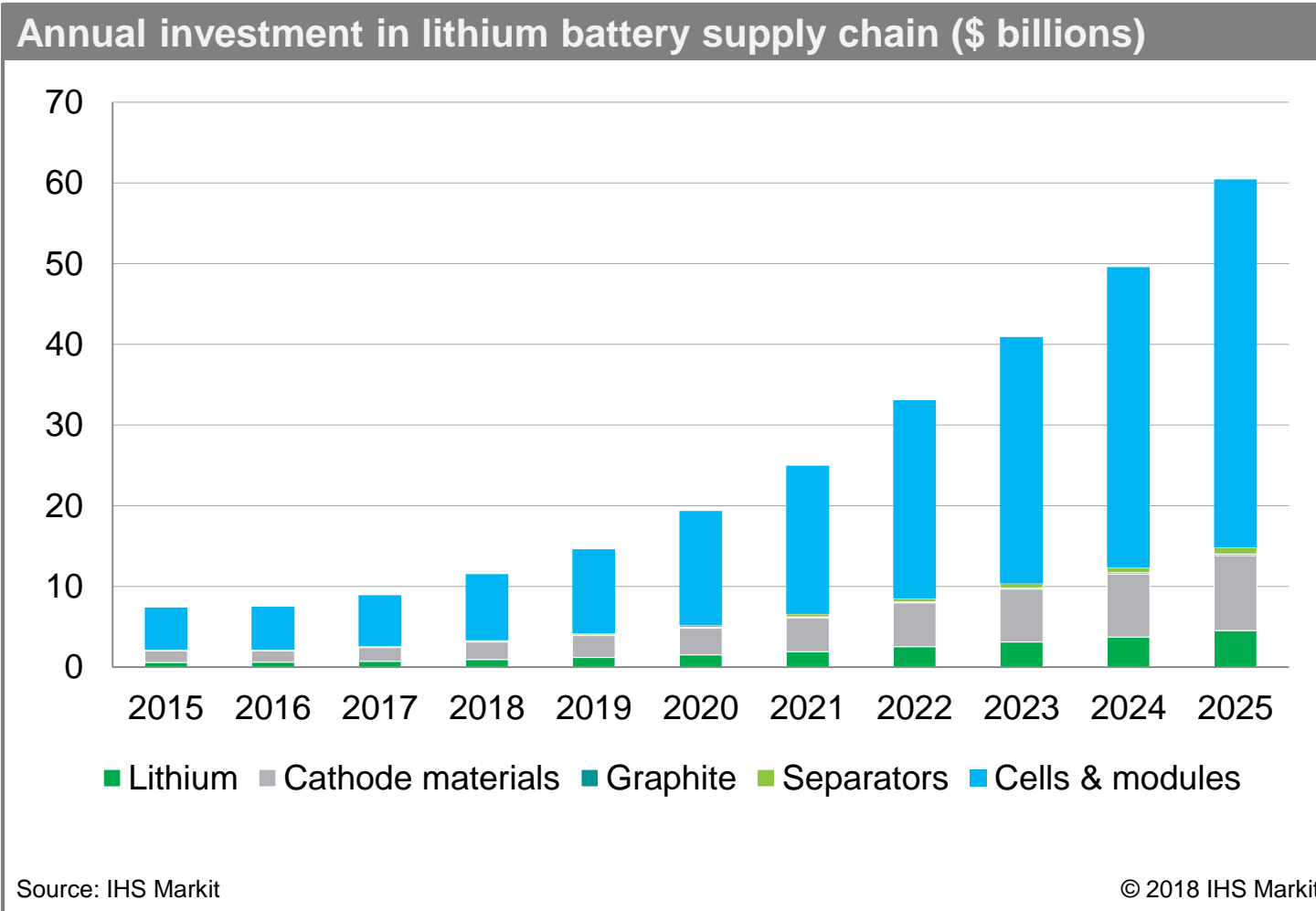
2015: EV lithium rush starts, worldwide



Source: IHS Markit

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Investments in production capacity; \$ billions, soon 10s of \$ billions



Recent examples of investments across the supply chain

Daimler	\$755 million	BEV + packs	China
SK Innovation	\$777 million	cells	Hungary
BASF	€400 million	cathode materials	prob. Finland
SQM	\$100 million	lithium	Chile
etc			

Source: IHS Markit © 2018 IHS Markit

Leveraging experience from other technology-driven markets to analyse trends in battery markets

Lessons learned from : photovoltaics, displays, RAM & flash memories

Market rules of manufacturing	Current status of lithium battery market
I. Learning rate: The product price decreases by 15-20% with every x2 on quantities produced.	On track, more or less. Needs to have more hindsight to confirm.
II. Production assets loose most of their relevance in ~5 years. Short-term investment loops build long-term market positions: <ul style="list-style-type: none"> ➤ 1. Build oversize 2. Reimburse and extract profit within ~5 years 3. In the meantime improve process and product 4. Repeat but 2-5x larger 	Currently within the second iteration for EV cells.
III. Prepare to endure for >15 years to come out on top of the market and achieve true success	See above and below
IV. Global oligopoles emerge across the supply chain.	Already in place for the components: separators, cathode materials, anode materials. Minerals and cells: supplier landscapes are blooming but cell manufacturers are on path to an extinction event mid-term
V. Manufacturing ends up in Asia.	There is still a chance that a significant share of components and cells will be manufactured in the US and Europe. But in factories owned by Asian companies.

Exploiting the opportunity

Gold seeker vs General store approach to the market

"Business model"

Gold seeker

General store

Example of recent client looking for insight about the battery market

US chemical company, not active in anything related to lithium batteries, looking to become a player

Japanese equipment supplier, looking for new business opportunities in Europe

Objective of the company

Find a sweet spot within the chain to incubate

Sell more equipment

What IHS Markit can provide

Vision, key figures, understanding of markets beyond the company's own; e.g., automotive, energy storage

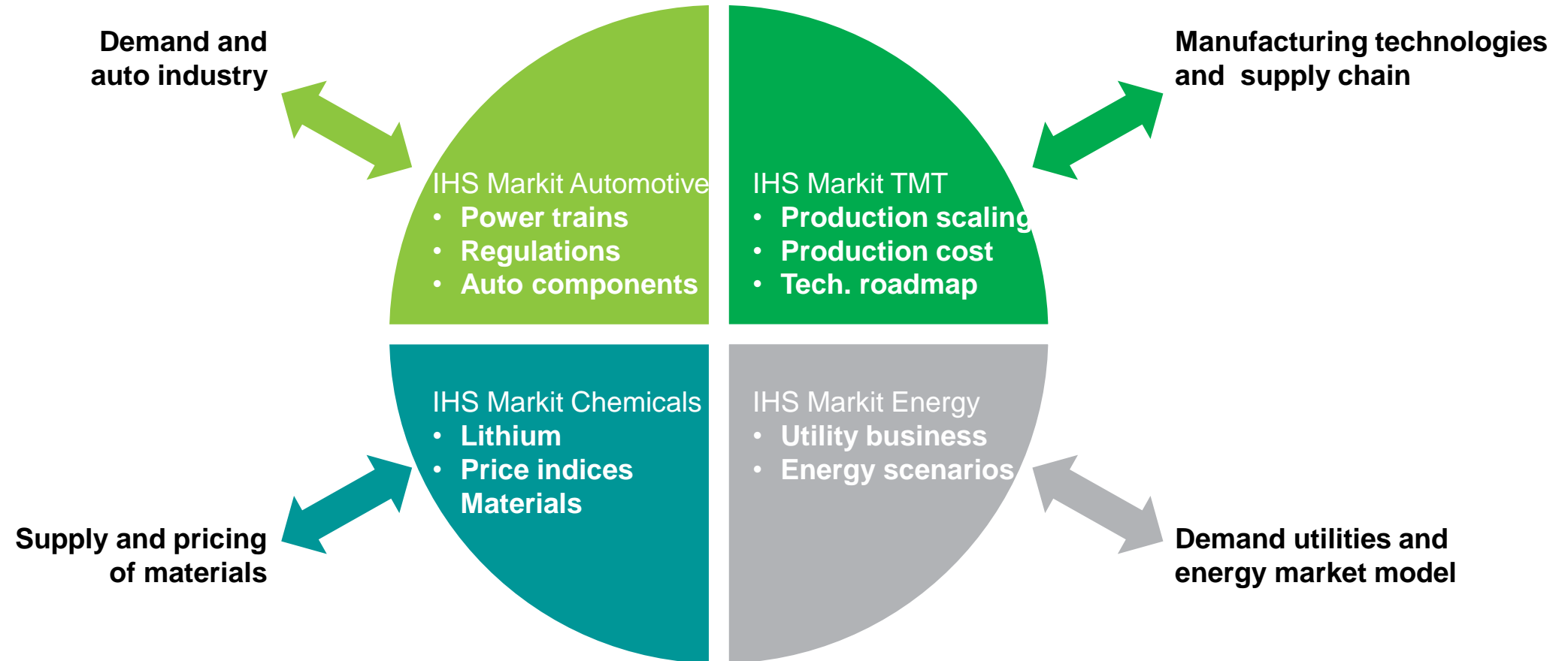
Forecast of units and revenues, customer trends and expectations

Source: IHS Markit

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IHS Markit combines all competence fields for market insights

Competence Cluster Lithium Batteries of IHS Markit



Source: IHS Markit

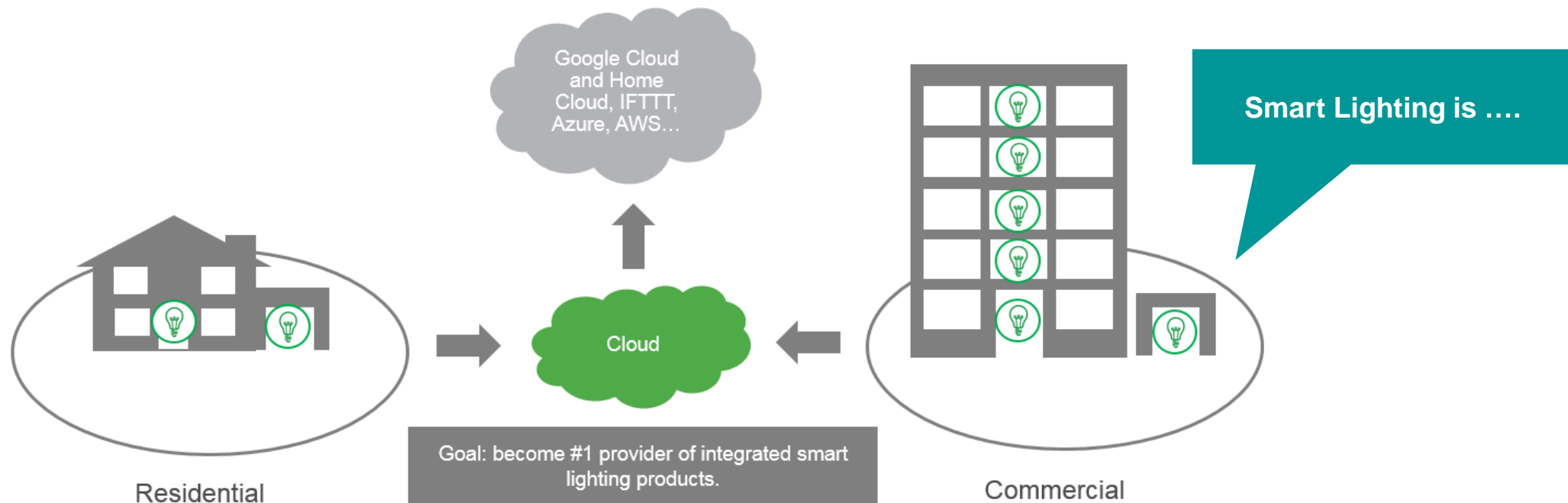
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Strategy – Which market segments to target?

“We intend to diversify into Smart Lighting. What do you advise?”

- More specifically, the company is looking to acquire an established player, which is growing nicely and leads technology trends (CEO of the company)

Company Goal: Diversify into adjacent markets



Source: IHS Markit

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A four step approach to develop a strategy

The Strategic consulting approach

What are our goals & aspirations?

- Kick-off call
- Client introduction (from President)
- On-site meeting 1 – company interviews and understanding

Which Markets do we address?

- On-site meeting 1 – data discussion
- building lighting equipment/service data
- Market trends
- Competitive environment
- Segment identification and analysis

How will we win in chosen markets?

- Proposed strategy options and approach
- Acquisition target assessments
- Acquisition target recommendation

What capabilities must be in place to win?

- Synergies and potential roadblocks
- Vision of new company
- Next steps in M&A process

Source: Playing to Win, Roger Martin

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Step 2 Where will we play

The client needed insights on product Data + Competition + Trends

Identifying growing market segments is initial step to strategy

smart lighting devices and services by channel (2021)

(millions of dollars)

2021 Revenue (North America)		Channel #1	Channel #2	Channel #3	Channel #4	Channel #5	Channel #6	Channel #7	Channel #8	Channel #9
Product #1	500.0	415.0	27.5	2.5	0.0	0.0	0.0	50.0	0.0	5.0
Percentage (%)		83.0%	5.5%	0.5%				10.0%		1.0%
Product #2	300.0	12.0	279.0	6.0	1.5	1.5	0.0	0.0	0.0	0.0
Percentage (%)		4.0%	93.0%	2.0%	0.5%	0.5%				
Product #3	300.0	0.0	0.0	279.0	0.0	15.0	0.0	6.0	0.0	0.0
Percentage (%)				93.0%		5.0%		2.0%		
Product #4	500.0	0.0	5.0	5.0	130.0	267.5	10.0	70.0	10.0	2.5
Percentage (%)			1.0%	1.0%	26.0%	53.5%	2.0%	14.0%	2.0%	0.5%
Product #5	900.0	0.0	9.0	9.0	189.0	486.0	4.5	193.5	4.5	4.5
Percentage (%)			1.0%	1.0%	21.0%	54.0%	0.5%	21.5%	0.5%	0.5%
Product #6	250.0	0.0	2.5	2.5	62.5	135.0	1.3	45.0	0.0	1.3
Percentage (%)			1.0%	1.0%	25.0%	54.0%	0.5%	18.0%		0.5%
Product #7	350.0	0.0	0.0	7.0	101.5	147.0	3.5	10.5	77.0	3.5
Percentage (%)				2.0%	29.0%	42.0%	1.0%	3.0%	22.0%	1.0%
Product #8	450.0	0.0	4.5	0.0	99.0	247.5	4.5	90.0	4.5	0.0
Percentage (%)			1.0%		22.0%	55.0%	1.0%	20.0%	1.0%	
Product #9	150.0	0.0	0.0	0.0	0.0	63.0	52.5	34.5	0.0	0.0
Percentage (%)						42.0%	35.0%	23.0%		
Total		0.0	21.0	302.5	582.0	1361.0	76.3	449.5	96.0	11.8

Lighting product strategy #1

Lighting product strategy #2

Lighting product strategy #3

Lighting product strategy #4

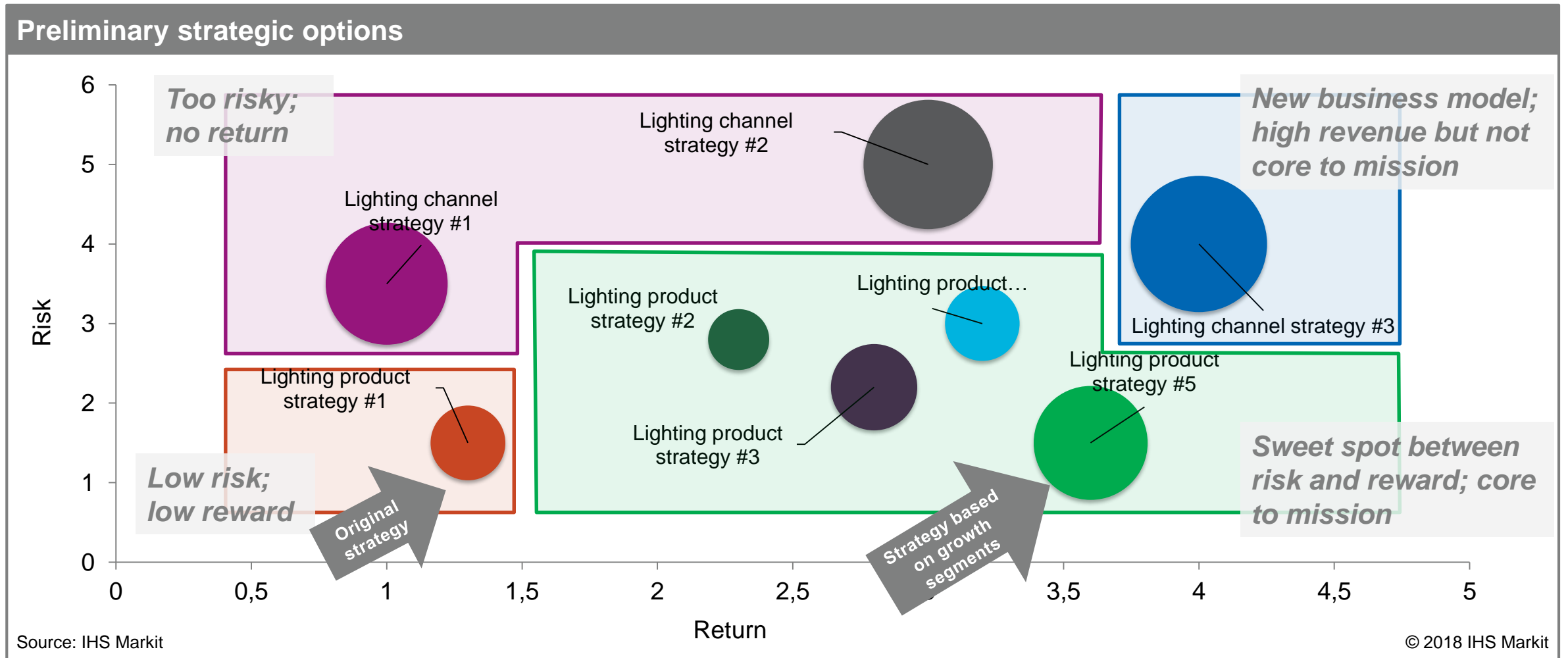
Lighting product strategy #5

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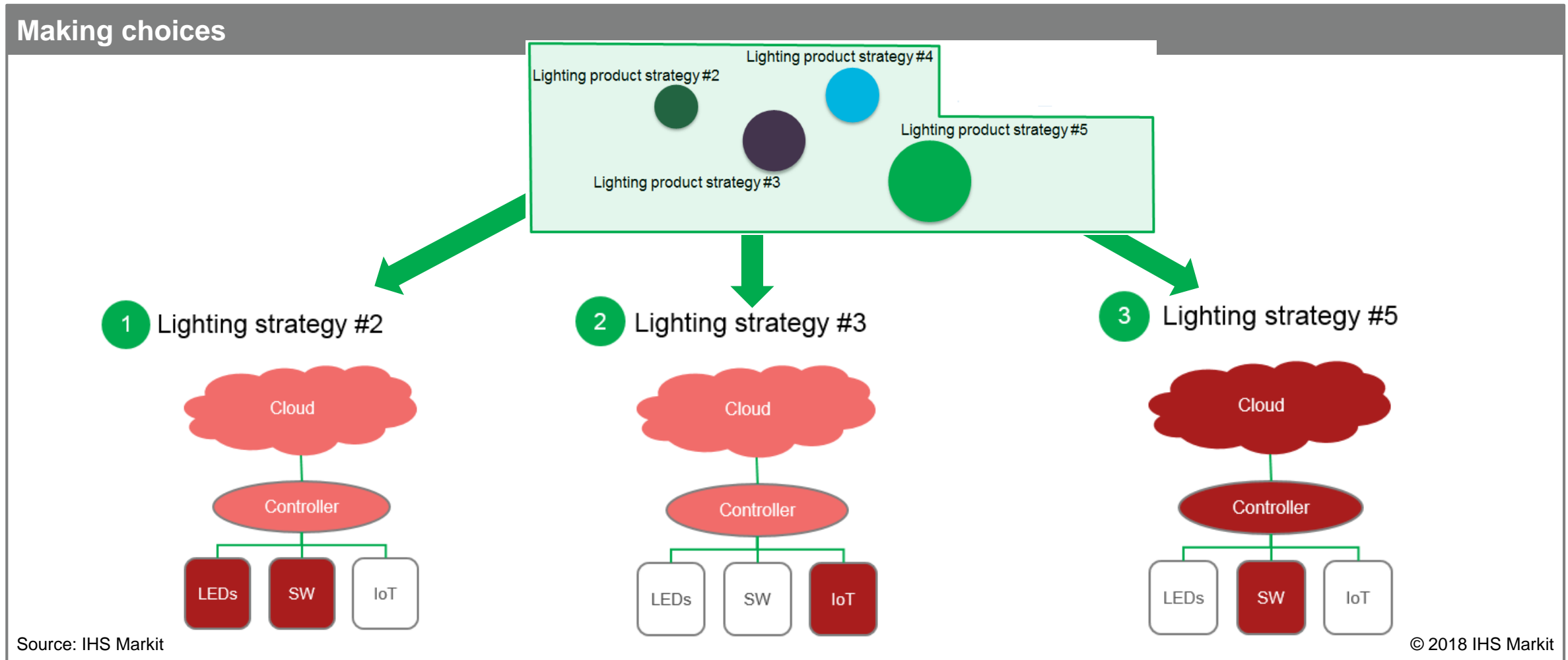
Step 2 Where will we play

With data analysis, the client can address high reward segments



Step 3 How will we win

Software and system solutions are critical to enter the market



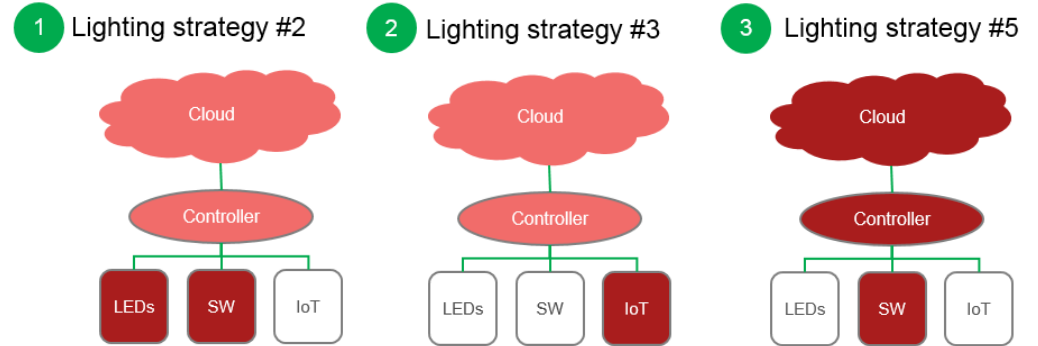
Step 3 How will we win

Addressing new markets also requires new capabilities

Capabilities needed to win

Takeaway:
Potential M&A partners
and philosophy of change
"Software is key"

Next steps....



	1 Lighting strategy #2	2 Lighting strategy #3	3 Lighting strategy #5
	Company #1	Company #2	Company #3
Solution mission fit	★ ★ ★	★ ★	★ ★ ★
Contribution to company top line	★	★ ★ ★	★ ★ ★
Technology and products	★ ★	★ ★	★ ★ ★
Ease of integration	★ ★ ★	★	★ ★
Overall	Score 9	Score 8	Score 11

Source: IHS Markit

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