

# SMART MANUFACTURING RoI ALMANAC 2019

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**ALTIZON**  
The Industrial IoT Company



# PREFACE



Smart Manufacturing has gone beyond the pilot stage to being an integral part of digital transformation strategies adopted by the industrial world. Many global enterprises have launched Industrial IoT (IIoT) initiatives to develop IIoT-enabled connected products and services, as well as use IIoT to achieve their own operational improvements. Most companies have become machine data-savvy and today's factory is rapidly becoming a digital native. Real-time categorized machine data is now the backbone of any Industry 4.0 initiative.

For the past six years, Altizon has been helping enterprises navigate their IIoT transformation journey. We offer an Industrial IoT platform (Datonis) and vertical solutions for Industry 4.0. We have connected over 100 manufacturing plants and implemented close to 276 IIoT initiatives with our customers and partners. Over the course of this journey, we have observed that every industry vertical has a specific set of problems (use cases) that are best suited for IIoT.

After the overwhelmingly positive response we received from customers, prospects, industry analysts and the industry at large regarding our last Smart Manufacturing Report, we are pleased to share with you our **2019 Smart Manufacturing ROI Almanac**. This report encompasses our analysis of the problems that are best solved by IIoT initiatives and the outcomes that you can expect. As always, we have shared our findings transparently while maintaining the highest standards of customer data confidentiality. All the data, insights, trends, and shared in this report are exclusively Altizon's and are not biased or influenced by any external entity. We anticipate enterprises will be able to use this new report as a benchmark for their Industry 4.0 initiatives, outcomes and processes. I invite you to share your feedback and your IIoT journey with us.

**- Vinay Nathan**

CEO, Altizon Systems | [vinay@altizon.com](mailto:vinay@altizon.com)

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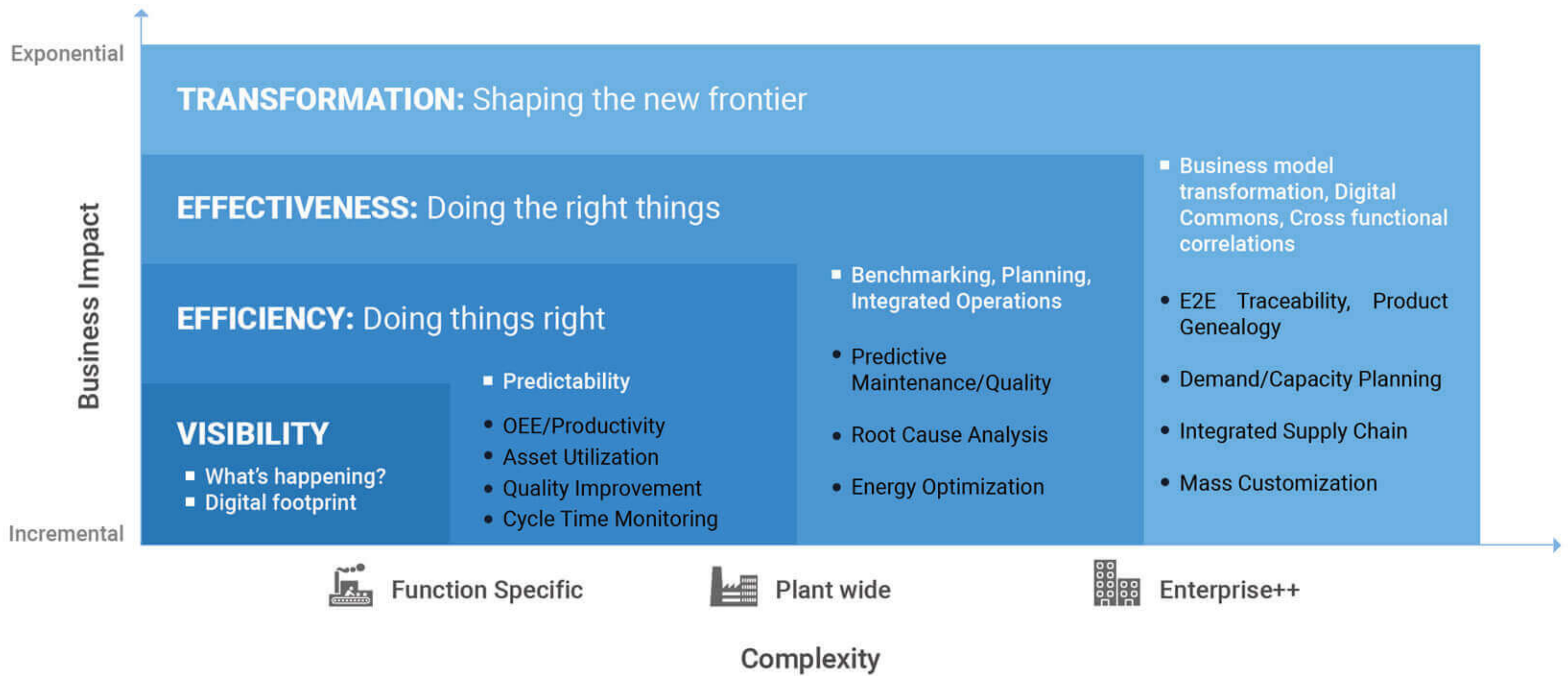
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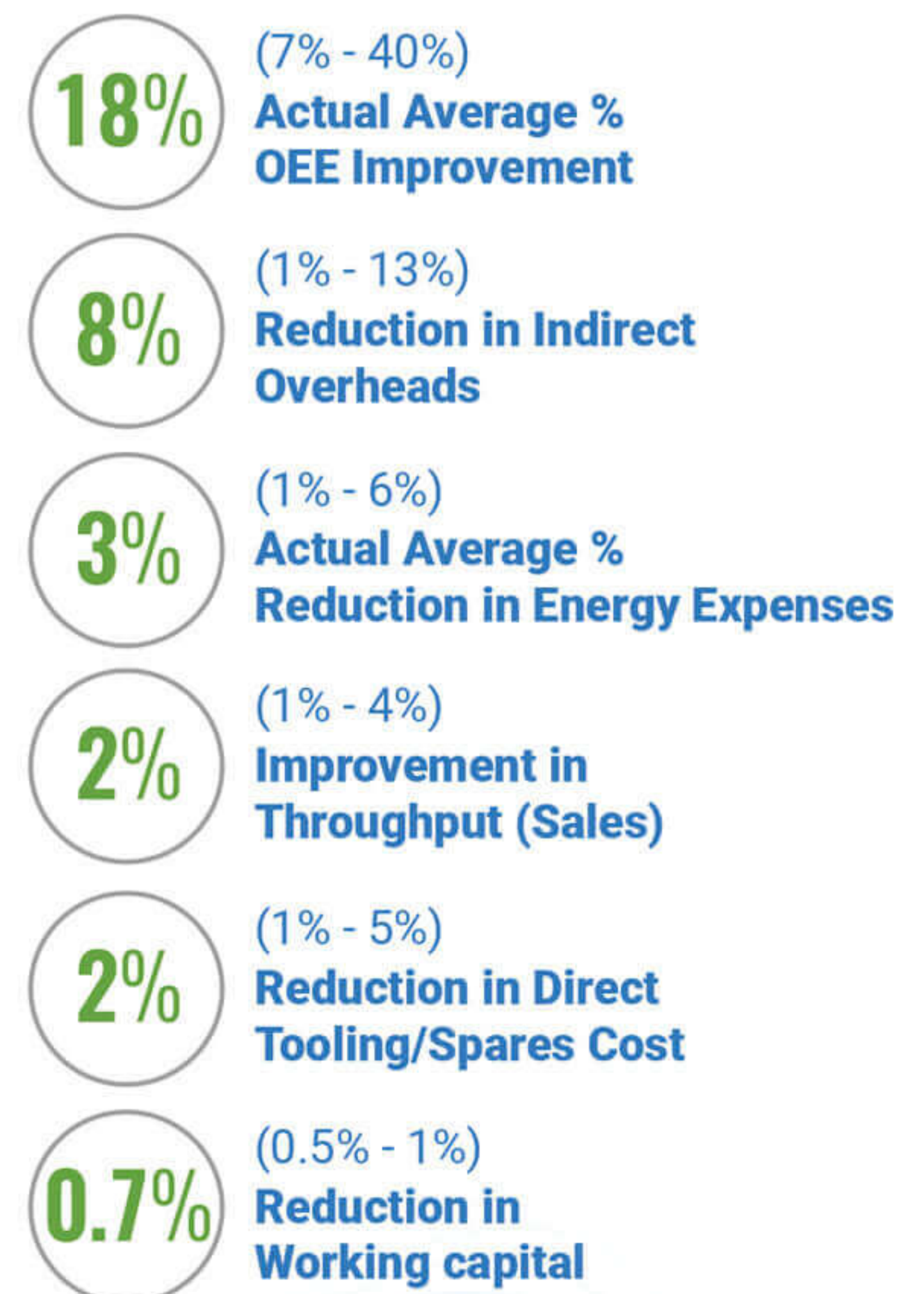
In our interactions with enterprises, a recurring theme has been the lack of a starting point, a reliable framework that helps organisations assess the best way to adopt the Industrial Internet of Things. Such a framework calibrates ROI expectations based on a state of IT-OT readiness and functional complexity, while also laying down a path to accomplish higher goals. Altizon's approach for doing IIOT the right way is captured herein. We work with the industrial world to map a clear strategy that addresses their key challenges based on where they are on their digital transformation journey.



## ALTIZON'S INDUSTRIAL IoT IMPLEMENTATION



### CUSTOMER BENEFITS



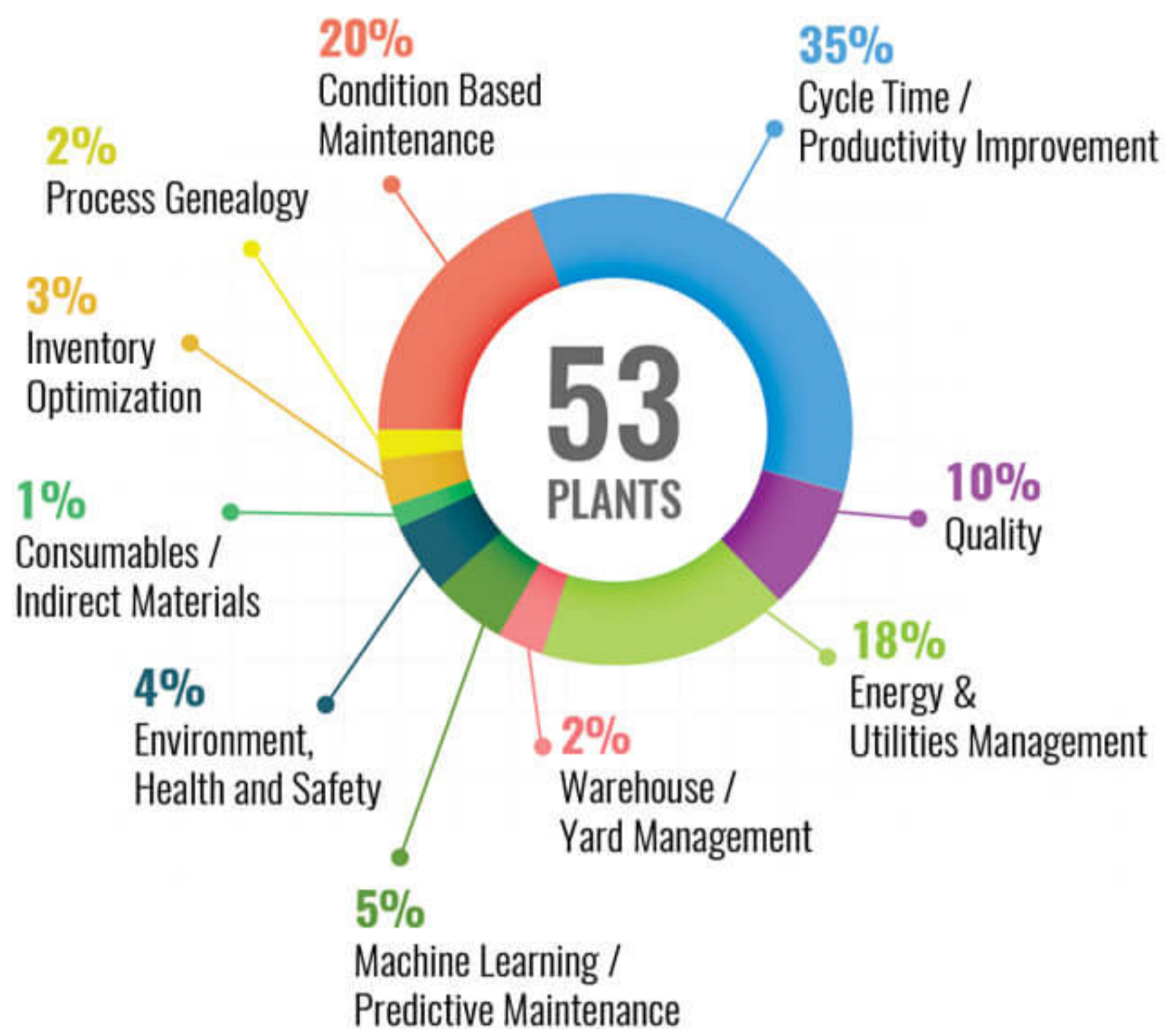


# AUTOMOTIVE INDUSTRY

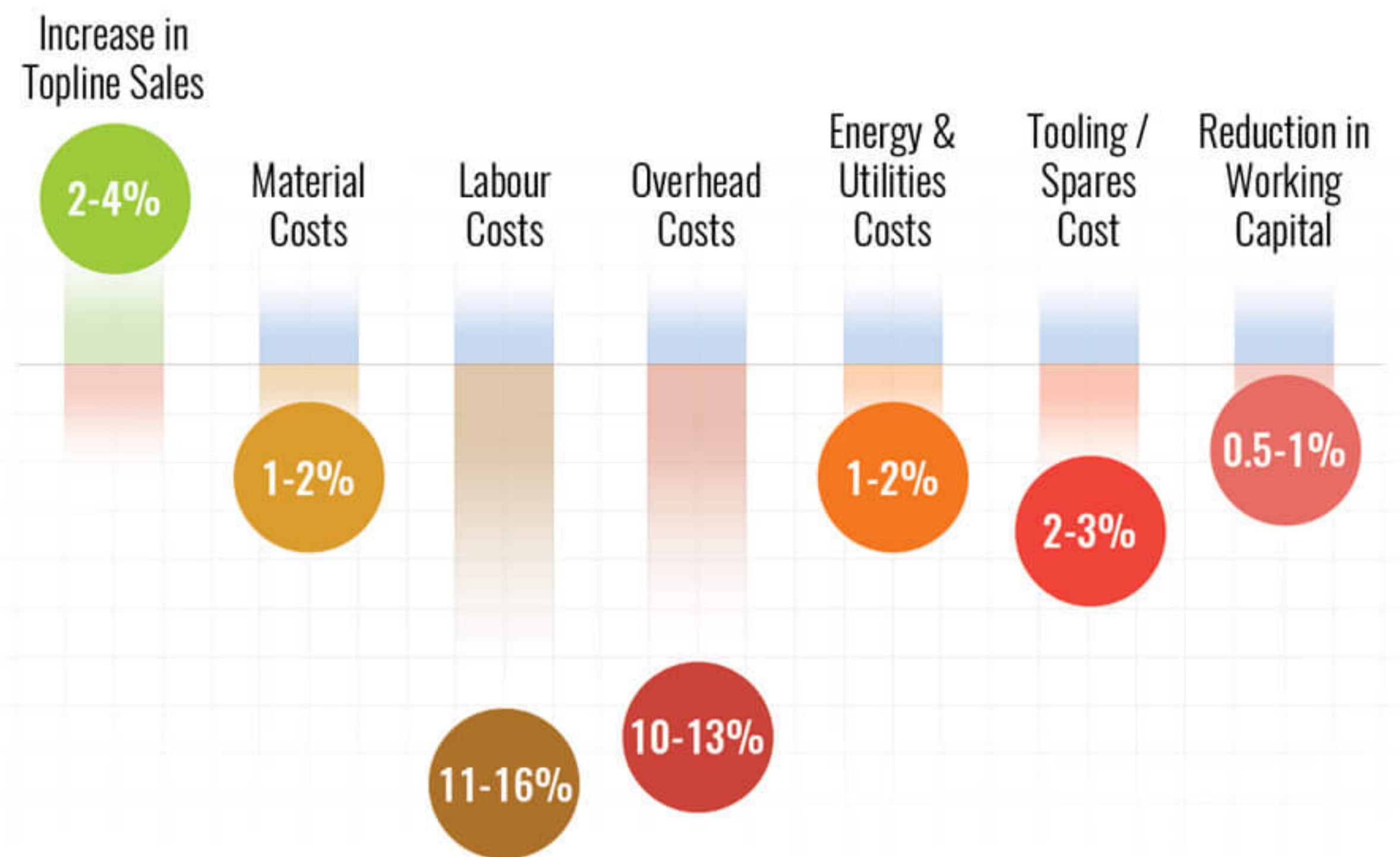
Automotive industry has embraced IIoT in a big way with wide variety of use cases. Significant savings are being realized in indirect labor and overhead costs. Typical payback period is 6-12 months for standard use cases like Productivity, Quality, Energy Management, and Condition Based Maintenance.

*Doing IIoT the Right Way!*

## IIoT PROJECTS DISTRIBUTION



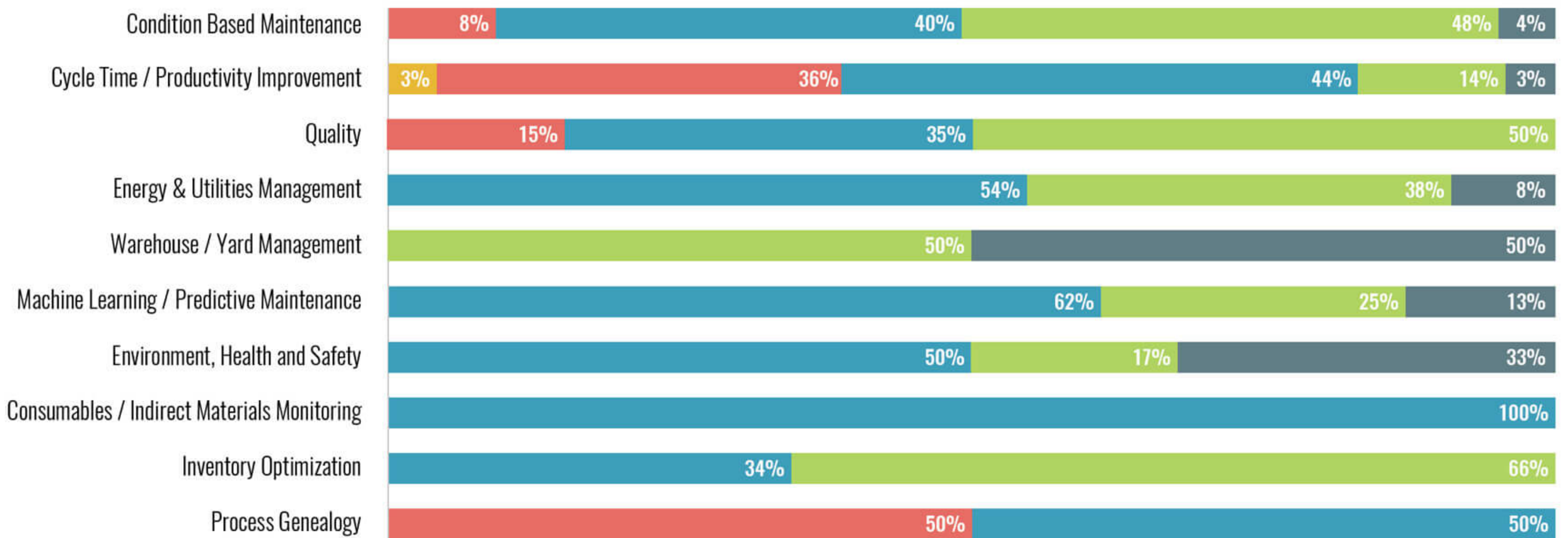
## IMPACT (% Savings across Cost Heads)



03

## IIoT PROJECTS - PAYBACK PERIOD CLASSIFICATION

Months: ● 0-3 ● 3-6 ● 6-12 ● 12-18 ● >18



## HIGHLIGHTS

- By uncovering a factory's hidden capacity, IIoT enables significant improvements in productivity and overall quality.
- Product and process genealogy across the manufacturing and supply chain is enabling transparency and predictability in operations and establishing digital trail for audits and compliance.

## TRENDS

- Operator skill matrix adherence, training identification and intelligent shift handover and allocation.
- Machine to machine integration and quality control.



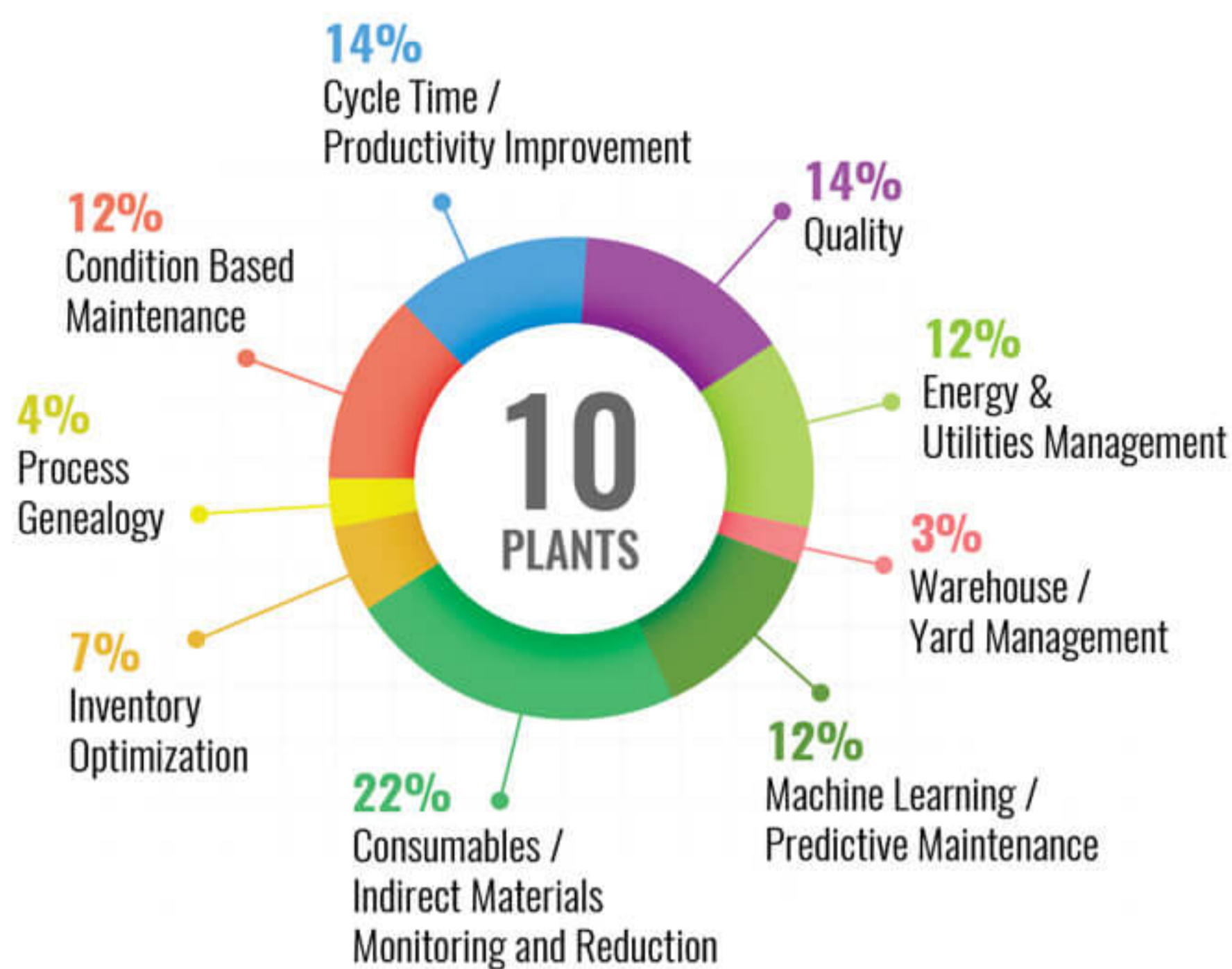


# TYRE INDUSTRY

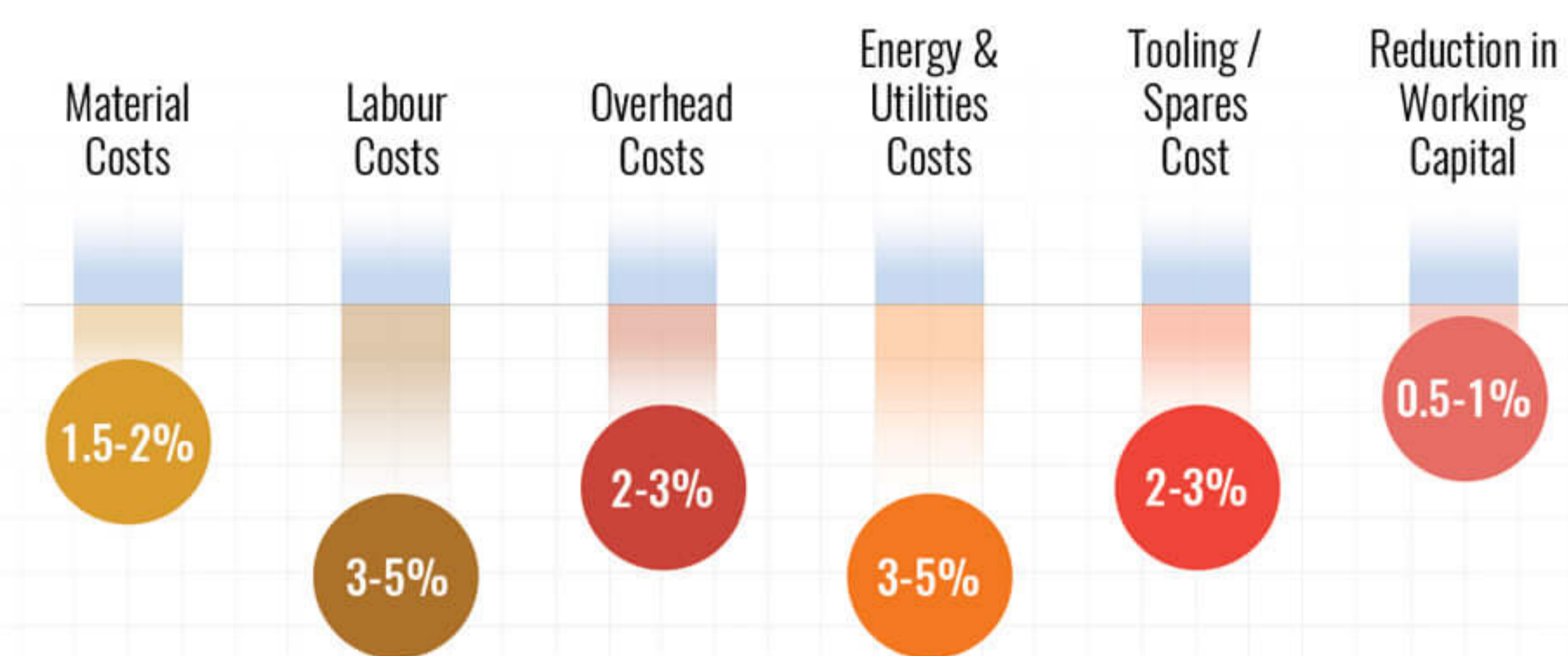
Tyre industry has complex processes such as mixing, extrusion, calendaring, and curing. Consumables Monitoring use case is as relevant as Productivity, Quality, and Condition Based Maintenance use cases. Due to associated complexities in this industry, payback period ranges between 12-18 months for many use cases.

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## IIoT PROJECTS DISTRIBUTION



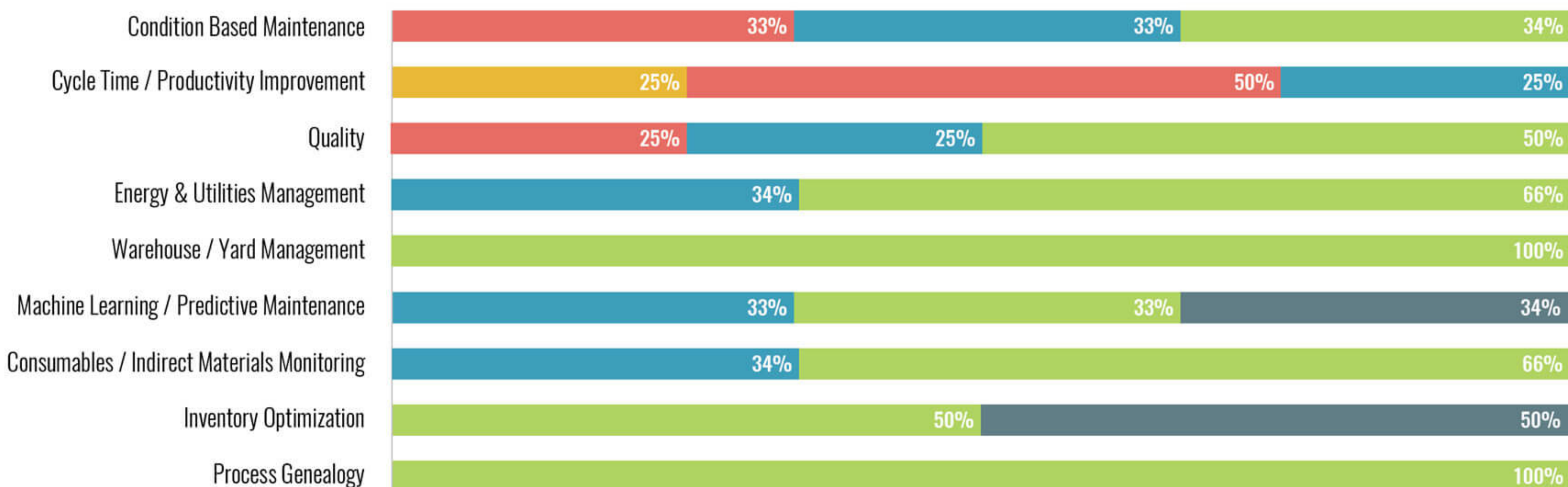
## IMPACT (% Savings across Cost Heads)



05

## IIoT PROJECTS - PAYBACK PERIOD CLASSIFICATION

Months: ● 0-3 ● 3-6 ● 6-12 ● 12-18 ● >18



## HIGHLIGHTS

- IIoT helps in measuring, analyzing, and controlling the usage of consumables and indirect materials, which are a significant part of expenses and are rarely monitored.
- IIoT helps establish genealogy and process traceability, right from mixing to warehouse storage. An IIoT solution can help bring process parameters under statistical control and significantly improve material yield.

## TRENDS

- Reconciliation of real-time production booking with planned data in ERP/Planning systems.
- Environmental Management and Adoption of ISO 50001.





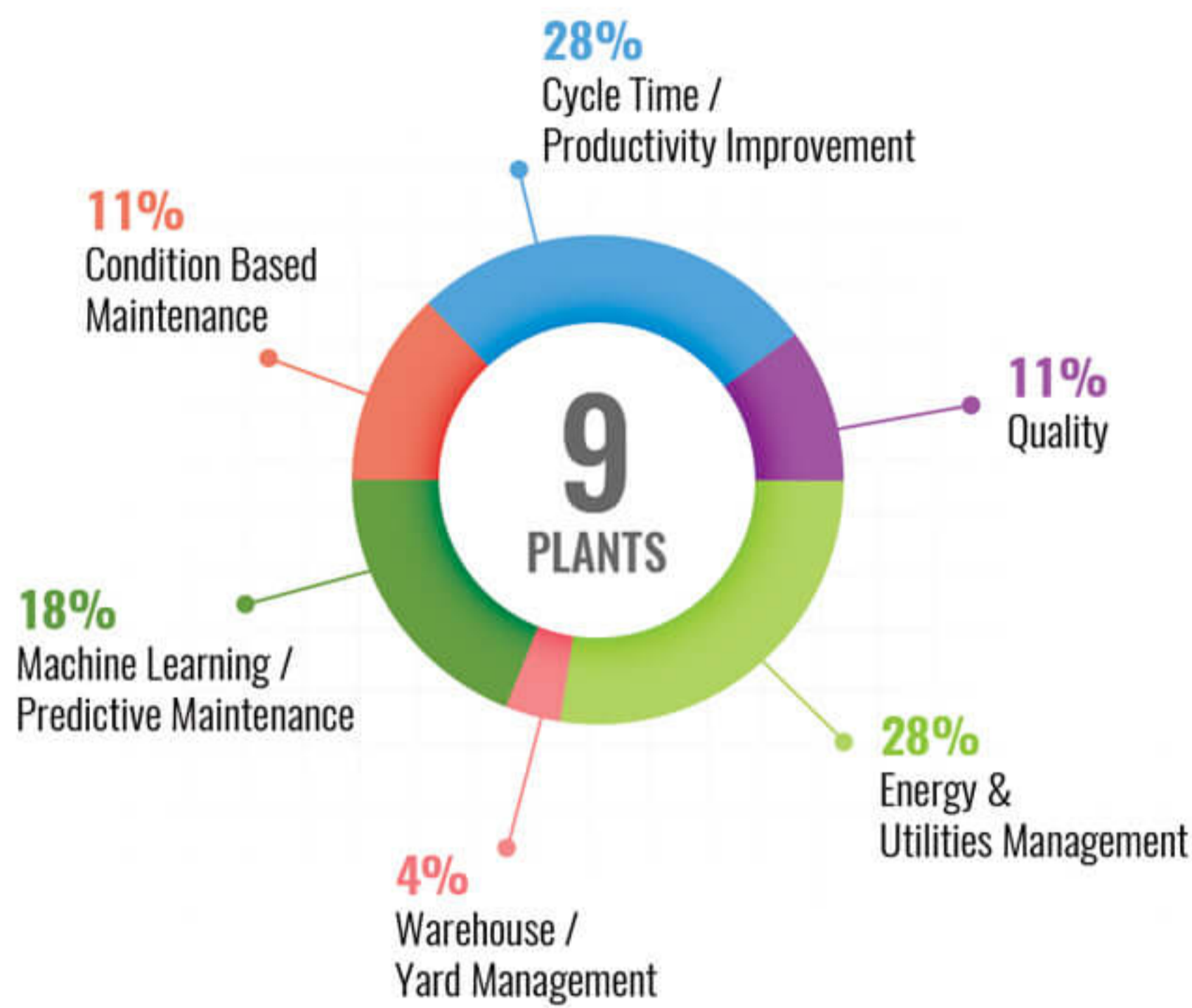
# INDUSTRIAL PRODUCTS

(White goods, electrical, electronics & semiconductor, etc.)

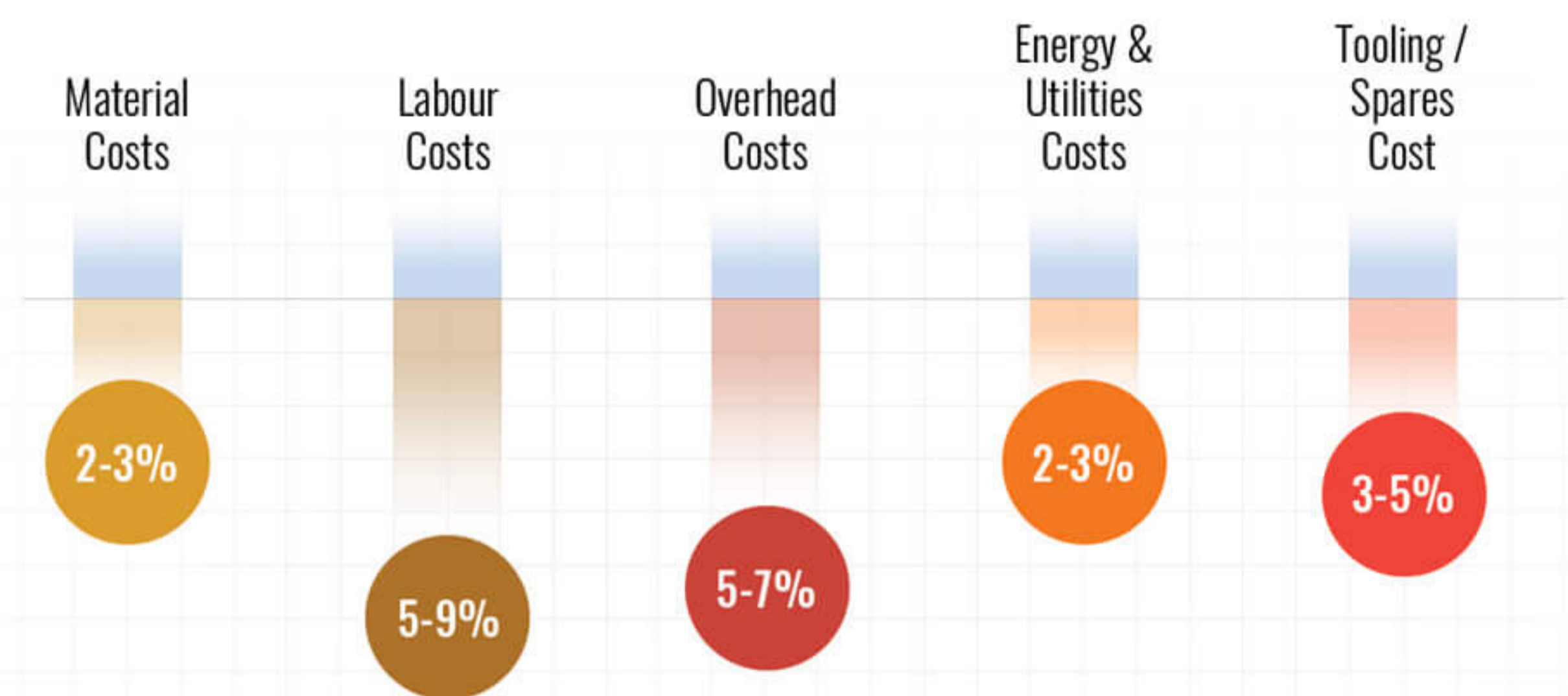
Industrial products industry has slowly started adopting IIoT with Productivity, Energy & Utilities Management, and Condition Based Maintenance as the preferred use cases. IIoT implementations have resulted savings in indirect labor and overhead costs. Average payback period in this industry is 12-18 months requiring a long term commitment.

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## IIoT PROJECTS DISTRIBUTION



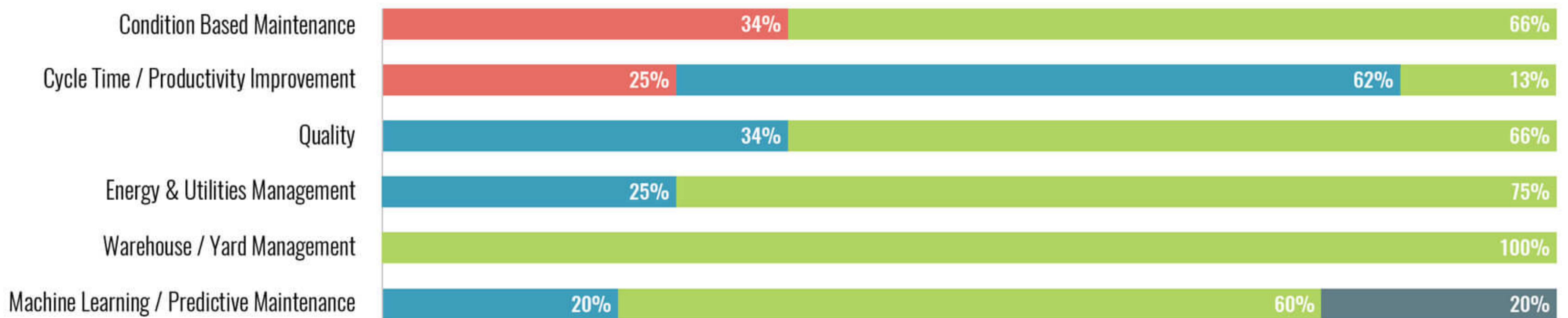
## IMPACT (% Savings across Cost Heads)



07

## IIoT PROJECTS - PAYBACK PERIOD CLASSIFICATION

Months: ● 0-3 ● 3-6 ● 6-12 ● 12-18 ● >18



## HIGHLIGHTS

- In the Industrial Products vertical, throughput and benchmark data is artificially high due to inaccurate data. Detailed machine data analytics can help establish accurate and realistic benchmarks.
- IIoT helps in end-to-end energy monitoring in the distribution network. This begins right from energy source to point of usage to help identify energy conservation opportunities and enable energy savings.

## TRENDS

- End-to-end process traceability and genealogy to meet compliance requirements and to avoid costly product recalls.
- Establish inter- and intra- plant performance benchmarking.



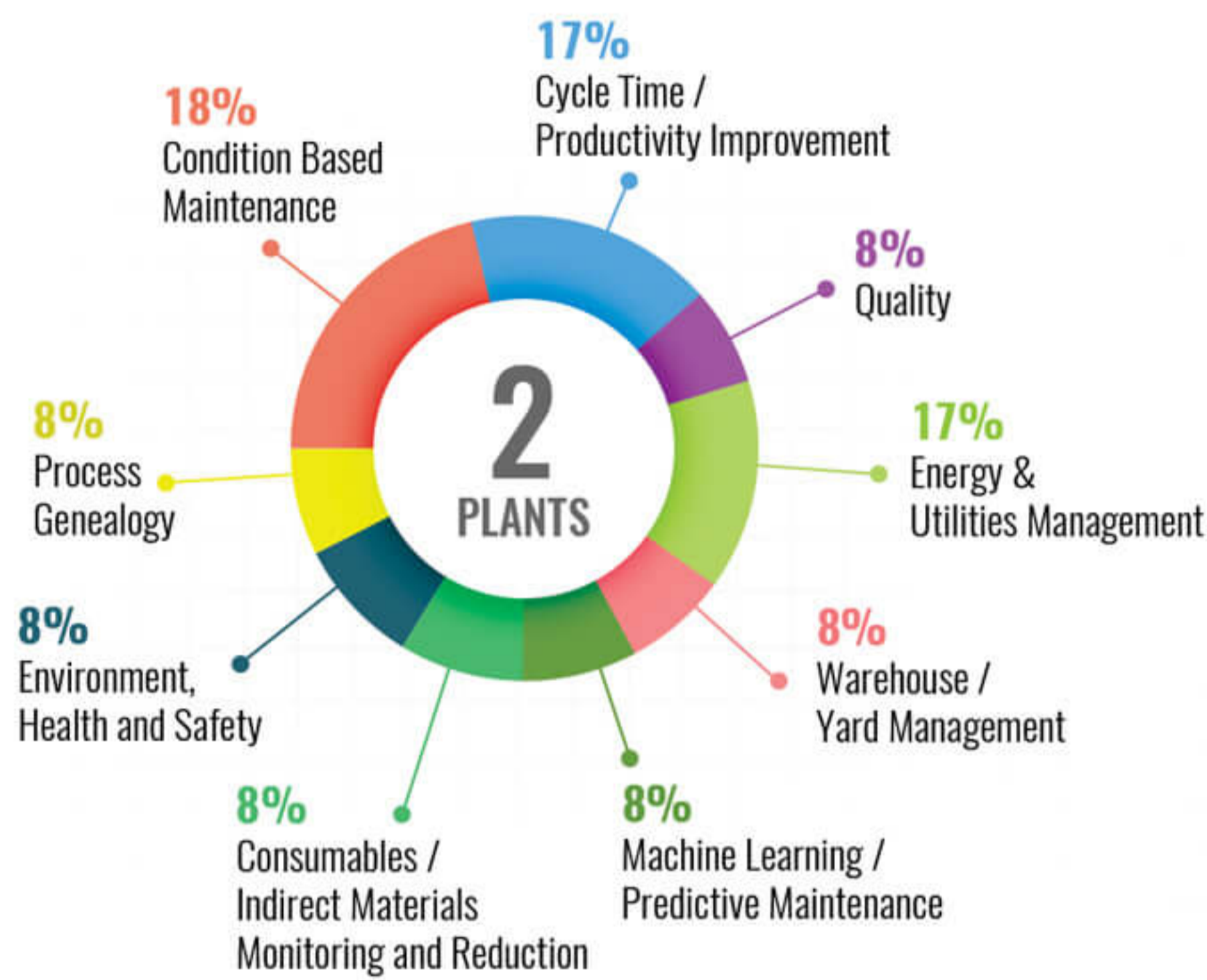


# METAL INDUSTRY

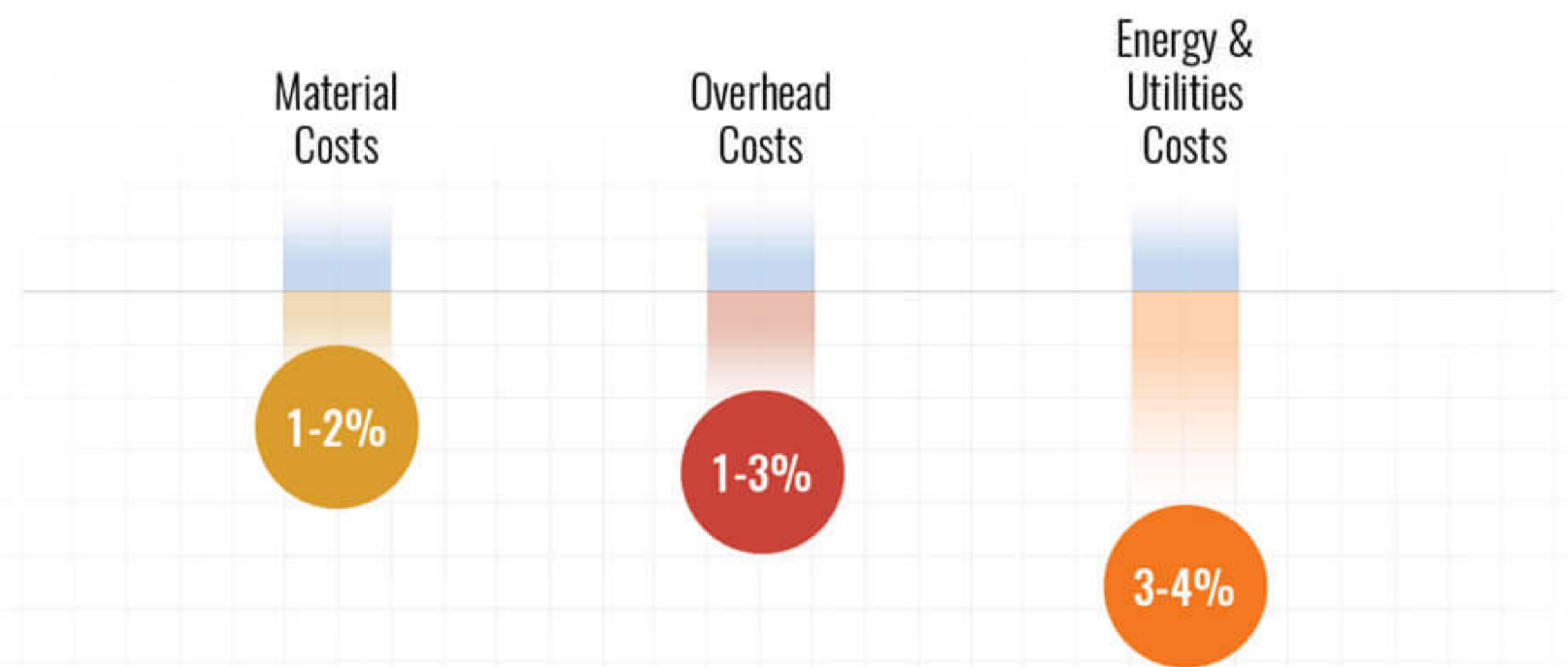
Metal industry is one of the highest consumers of energy resources, therefore Energy & Utilities Monitoring is a priority use case for this industry. Another important use case in this industry is establishing batch level traceability. Typical payback period for IIoT project in metal industry is longer, averaging around 12-18 months and requires a long term commitment.

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## IIoT PROJECTS DISTRIBUTION

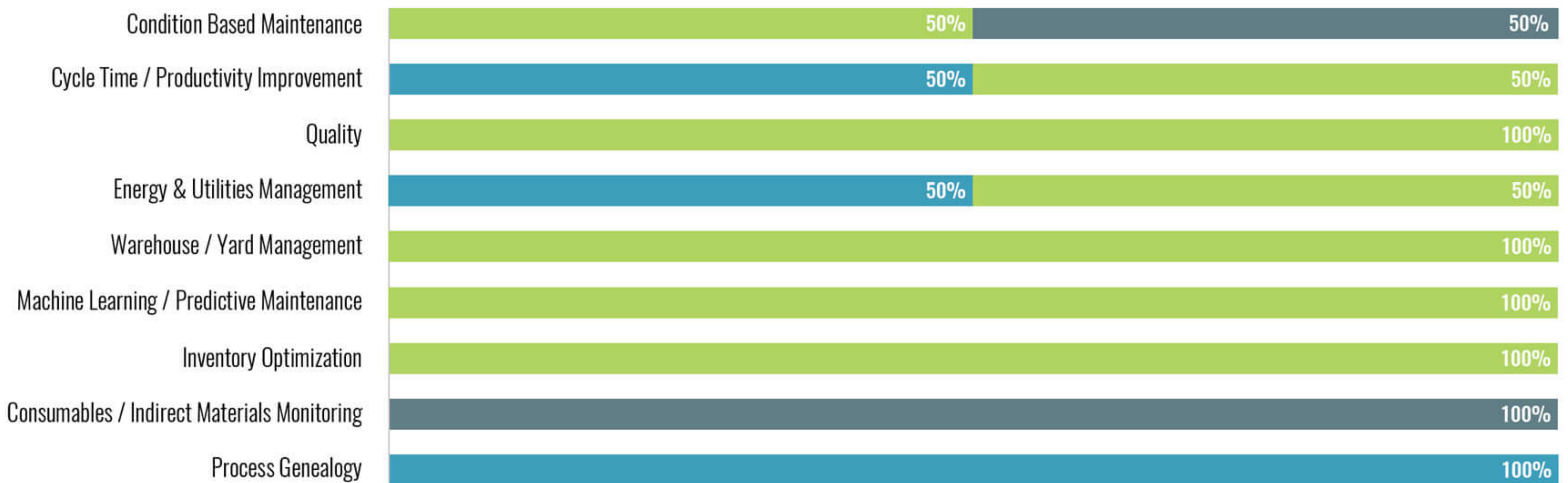


## IMPACT (% Savings across Cost Heads)



## IIoT PROJECTS - PAYBACK PERIOD CLASSIFICATION

Months: ● 0-3 ● 3-6 ● 6-12 ● 12-18 ● >18



## HIGHLIGHTS

- In this industry, although data is readily available, it resides in silos. Getting OT and IT together and associating it with the batch generates powerful actionable insights for process improvements.
- The IIoT solutions are helping establish real-time first pass yield and eventually leading to predictive quality.

## TRENDS

- Genealogy across manufacturing supply chain from mining to distribution.
- Environmental Management and Adoption of ISO 50001.



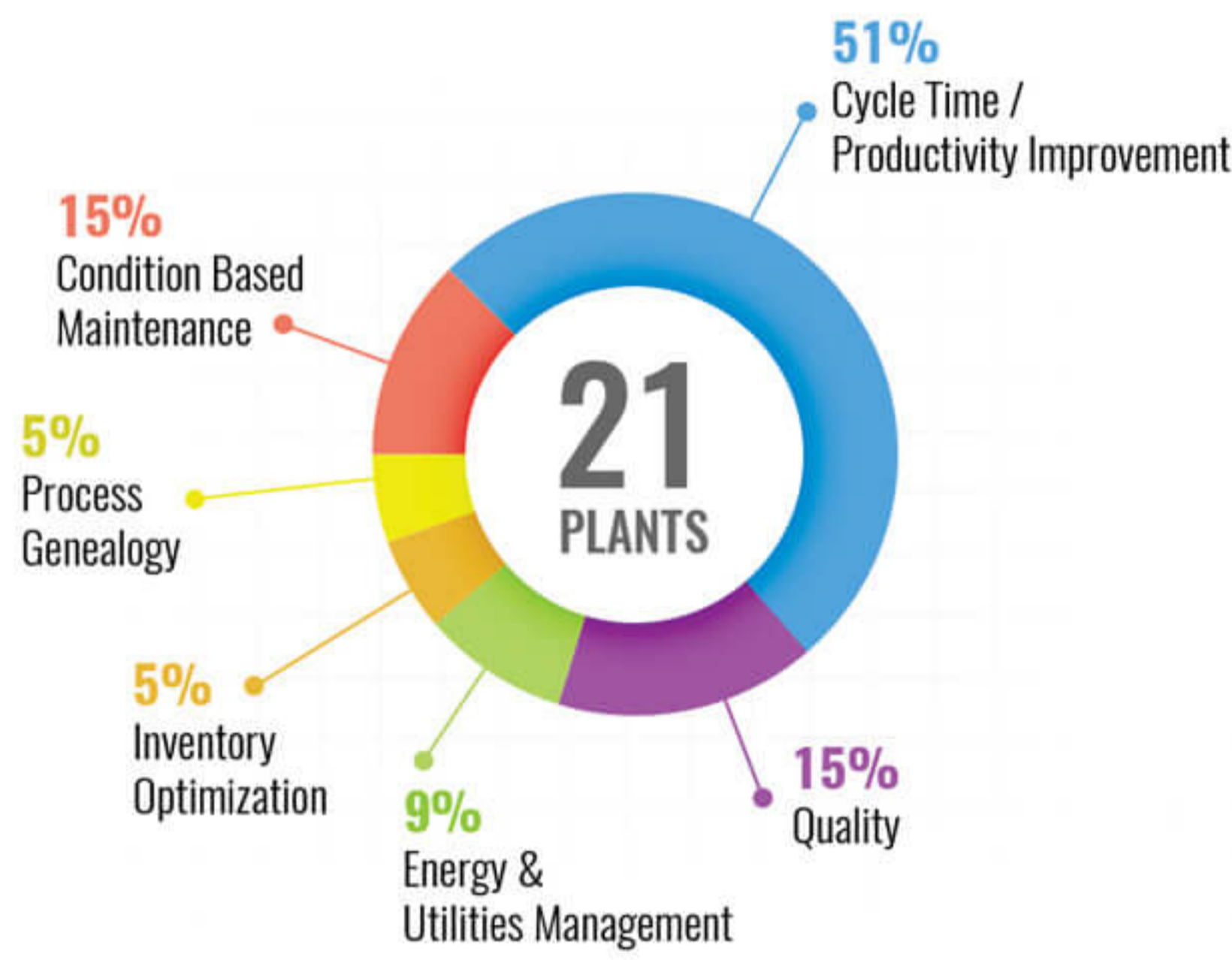
# FMCG INDUSTRY



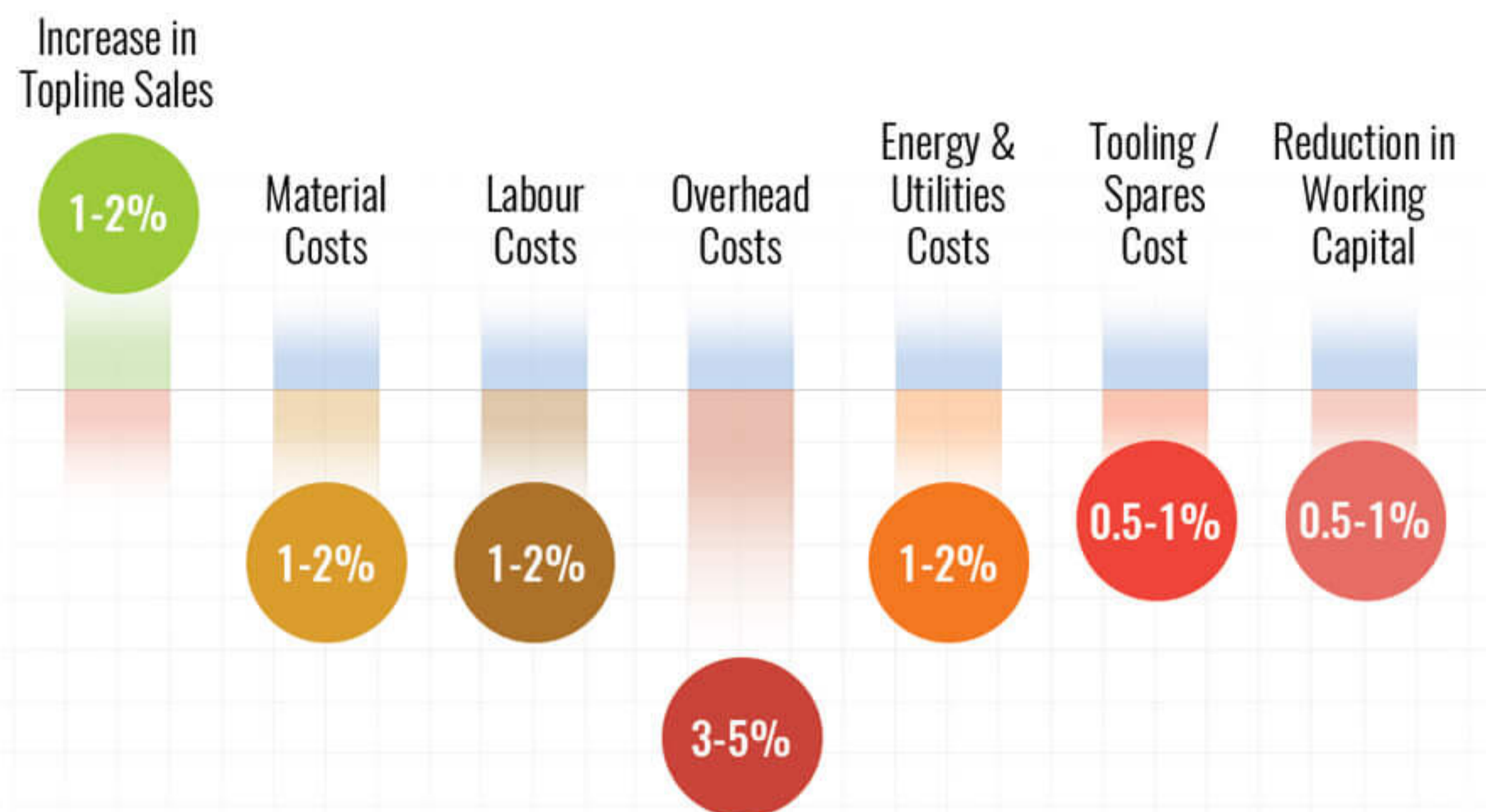
FMCG industry is one of the fastest adopters of IIoT. Productivity Improvement is a top priority, as is establishing Supply Chain Traceability. Rapid gains can be made on bottling and packaging lines, with average payback period being in 12-18 months timeframe.

*Doing IIoT the Right Way!*

## IIoT PROJECTS DISTRIBUTION

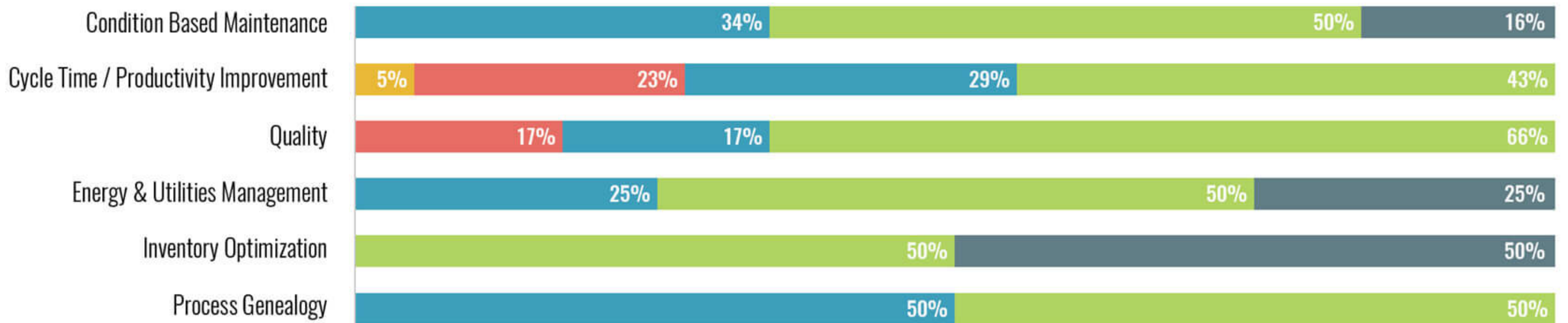


## IMPACT (% Savings across Cost Heads)



## IIoT PROJECTS - PAYBACK PERIOD CLASSIFICATION

Months: ● 0-3 ● 3-6 ● 6-12 ● 12-18 ● >18



## HIGHLIGHTS

- In multi-product plants with varying line speeds, floating bottlenecks affect overall productivity. These bottlenecks can be identified and eliminated by detailed machine data analytics.
- IIoT data is used for correlation between quality and line speed.
- IIoT-enabled productivity improvements in co-packer operations, a critical component of the CPG distribution chain, are helping improve delivery due to date adherence and control conversion costs of operations.

## TRENDS

- Digital trace of operations becoming mandatory for compliance and audits.
- Performance benchmarking within and across plants for similar product categories.





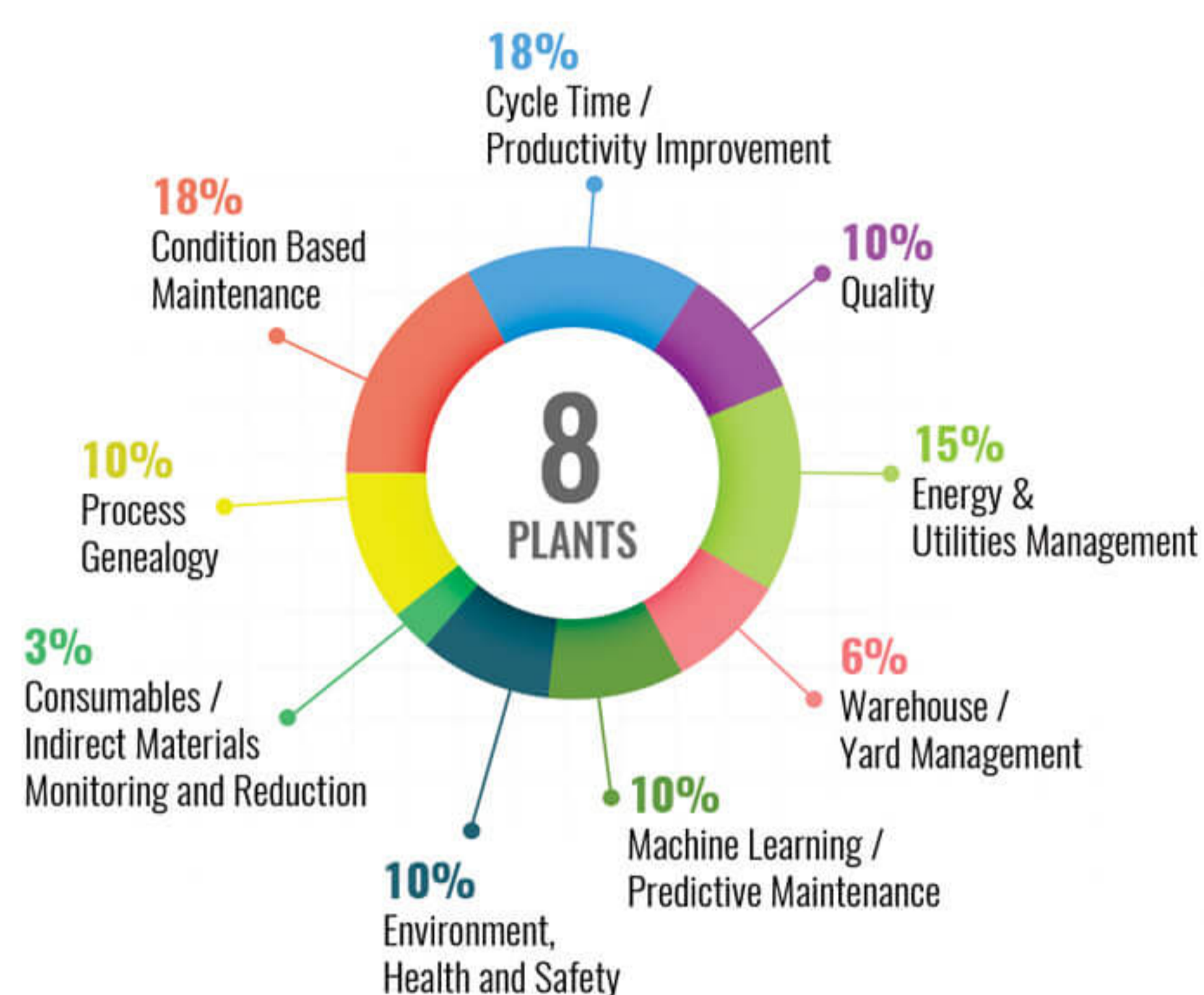
# CHEMICAL INDUSTRY



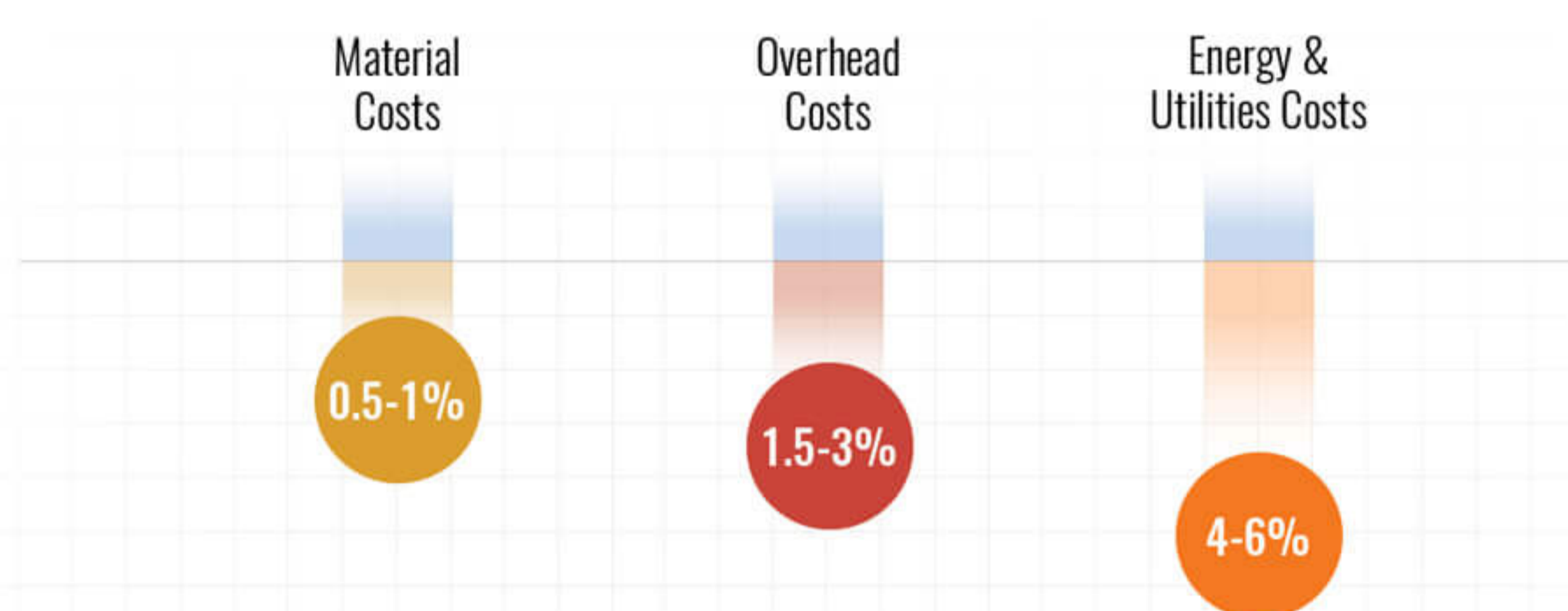
Chemical industry has high level of automation and has already made significant strides to adopt IIoT. There is a greater variety in the number of successful use cases in this industry with the highest cost savings stemming from Energy & Utilities Management. Payback period in this industry differs dramatically from use case to use case.

*Doing IIoT the Right Way!*

## IIoT PROJECTS DISTRIBUTION



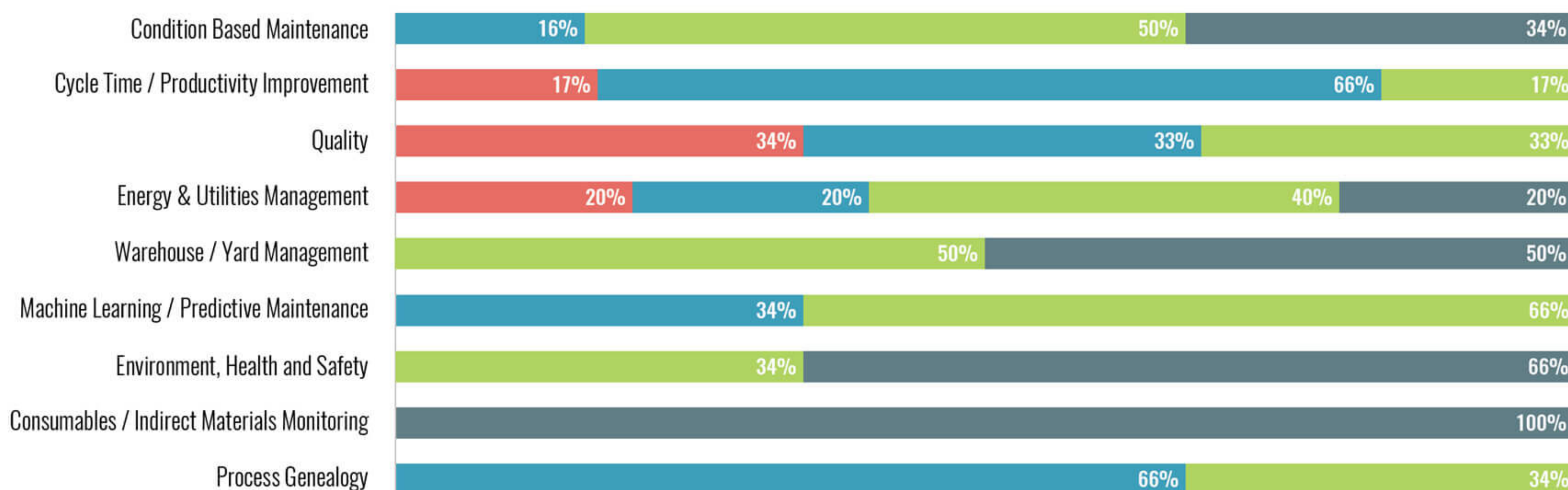
## IMPACT (% Savings across Cost Heads)



13

## IIoT PROJECTS - PAYBACK PERIOD CLASSIFICATION

Months: ● 0-3 ● 3-6 ● 6-12 ● 12-18 ● >18



## HIGHLIGHTS

- IIoT helps in re-establishing productivity benchmarks. By connecting process lines and measuring actual performance of machines in terms of time and not in terms of output produced, the gap between perceived capacity and actual capacity of a plant is bridged.
- IIoT-enabled batch level process genealogy provides powerful insights and predictability in operations.

## TRENDS

- Predicting quality and process yield based on detailed analysis of raw material used.
- IIoT-enabled environmental and safety systems .

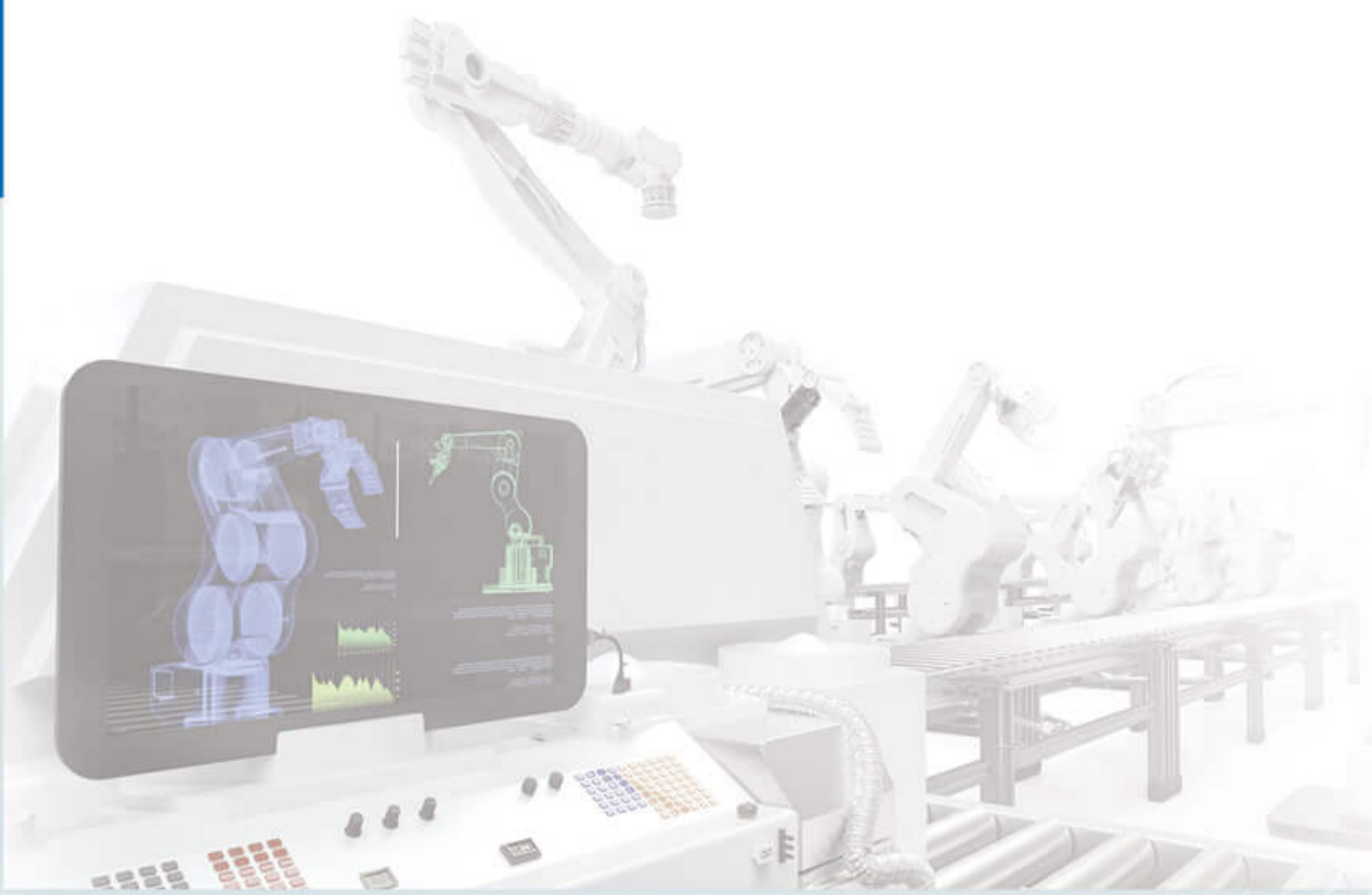






## ALTIZON

Altizon, an Industrial IoT Company, empowers Industrial Digital Revolutions globally by helping enterprises use machine data to drive business decisions. We enable digital transformation in enterprises by accelerating Smart Manufacturing initiatives, modernizing Asset Performance Management and pioneering new Business Models for service delivery. With a global footprint of over 100 enterprise users, Altizon is a leading Industrial IoT platform provider as recognized by Gartner in its Magic Quadrant for IIoT Platforms and by other analyst firms including Forrester, Frost & Sullivan, VDC Research, and Machnation.



For more info:  
[www.altizon.com](http://www.altizon.com)

## GLOBALLY RECOGNIZED



Recognized in **Gartner Magic Quadrant** for Industrial IoT Platforms 2018



Altizon in 10 Hot IoT Startups to Watch in 2018



Leadership in Product Innovation Award 2017



Altizon Recognized in Smart Manufacturing Report



Altizon in Startups Transforming Factory Floors, Oil Fields, Supply Chains



Altizon in IoT Business Applications Vendor Breakout Report



Altizon in Enterprise Ready Startup Periodic Table







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