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2024 Executive War College

How Labs Can Get Value From AI NOW

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Agenda

The Facts and Fiction of AI

So much hype!

AI and ML Definitions

Overview of capabilities and lab impact.

Is Any of This Real?

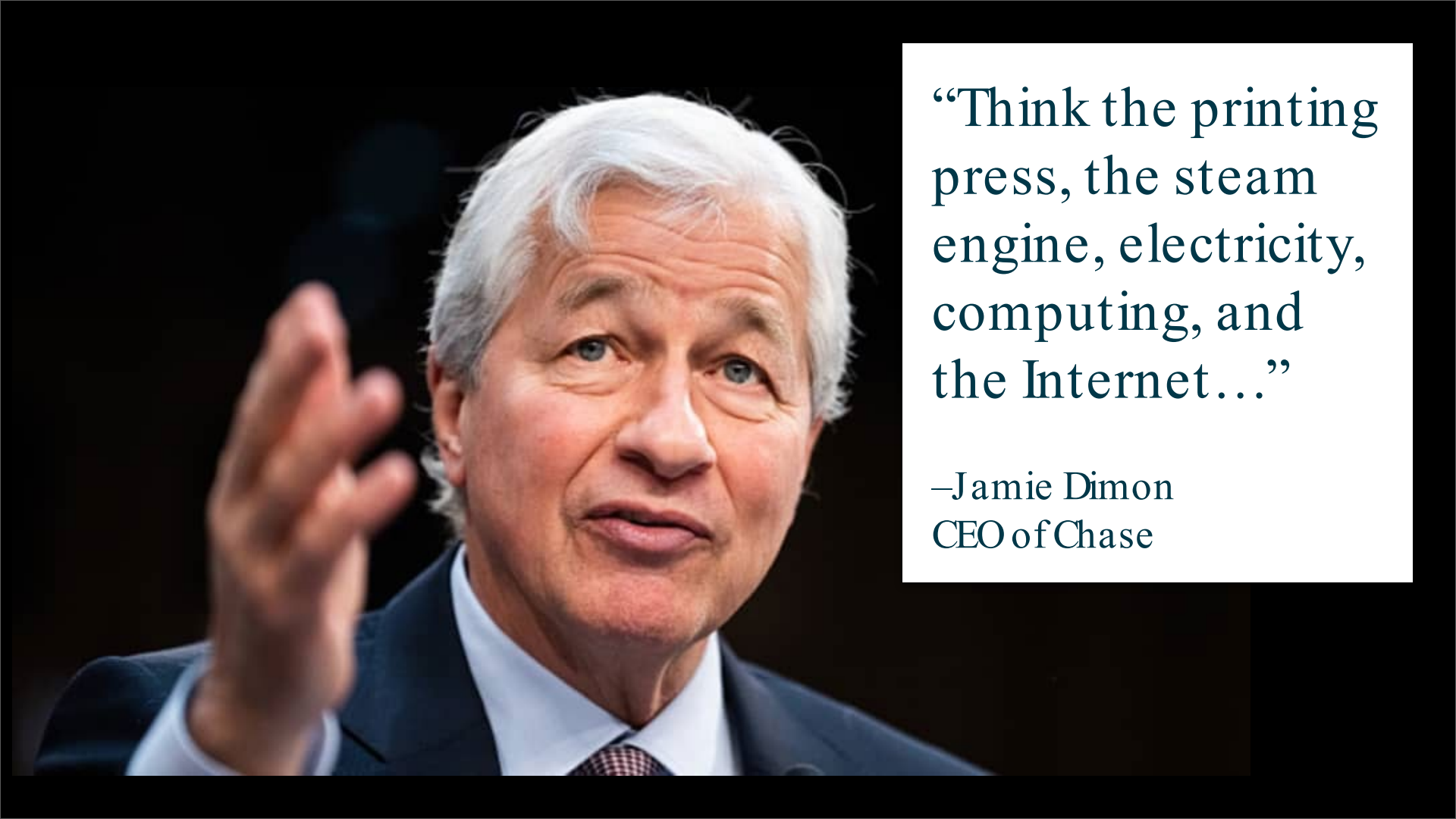
Real-world examples and case studies.

Maximizing the Value of AI and ML

Strategies for successful adoption.

Conclusion &Q/A

Recap and interactive discussion.


“Think the printing press, the steam engine, electricity, computing, and the Internet…”
–Jamie Dimon
CEO of Chase


“The impact of AI will be more profound than the invention of fire or electricity…”
–Sundar Pichai
CEO of Google

“My guess is we’ll have AI that is smarter than any one human probably around the end of next year” –Elon Musk

Parameters are similar to neurons in animal brains. More neurons equal higher intelligence. **The human brain has 86 billion neurons.**

ChatGPT 3 has 175 billion parameters.
ChatGPT 4 has 1.76 trillion parameters.

GPT always sounds sure, but it's not always right.

"It needs to connect, understand and **respond to human emotions in a way that actually feels authentic** and meaningful. I don't think we are anywhere close."

–Angel Vossough
CEO of BetterAI


HELLO DAVE

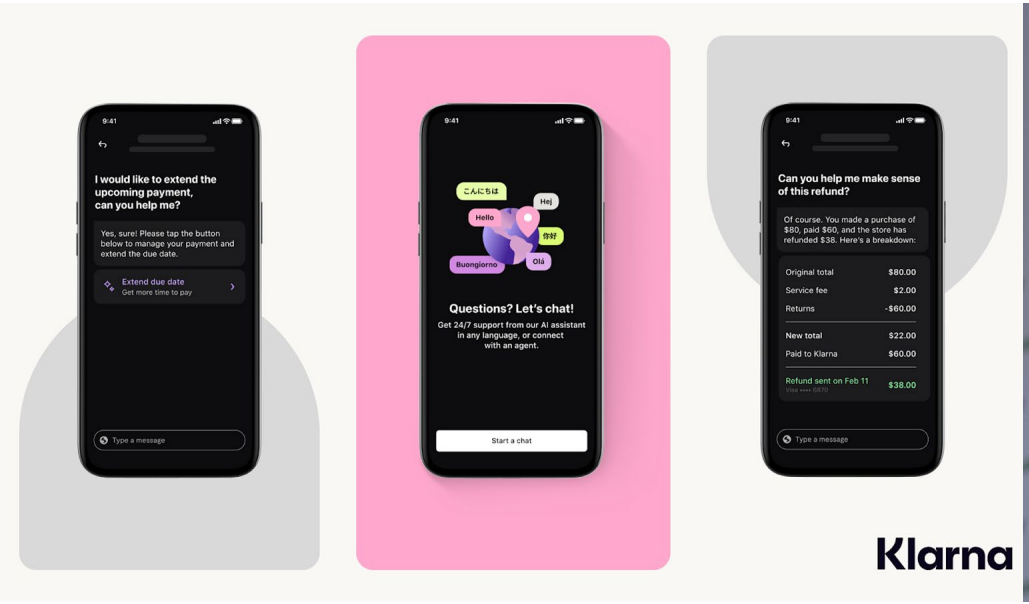
"...in the worst-case scenario, democracy and social order could collapse, resulting in wars."

–Akira Shimada
President & CEO of NTT

Beyond the hype!

How is AI actually impacting business and productivity today?

“Klarna AI assistant **does the work of 700 customer service agents**”



Source: Klarna. (2024, February 27). Klarna AI Assistant handles two-thirds of customer service chats in it’s first month by OpenAI Press release. Retrieved from http://www.klarna.com/

What does it mean to **labs** today?

Definitions: Data Science, AI, and ML

Data science is the study of data to extract meaningful insights for business. It is a multidisciplinary approach that combines principles and practices from the fields of mathematics, statistics, artificial intelligence, and computer engineering to **analyze large amounts of data**.

Artificial Intelligence Informs Decisions

Artificial intelligence is the science of making machines that can think like humans. It can do things that are considered "smart."

AI technology can process large amounts of data in ways, unlike humans. The goal for AI is to be able to do things such as **recognize patterns, make decisions, and judge like humans.**

Machine Learning Improves Over Time

Machine learning (ML) is a branch of artificial intelligence (AI) and computer science that focuses on using data and algorithms for **AI to imitate the way that humans learn, gradually improving accuracy.**

Source: https://www.clinicallab.com/how-labs-can-use-ai-and-ml-to-improve-operational-and-clinical-data-quality-27647

The value of AI and ML to your lab

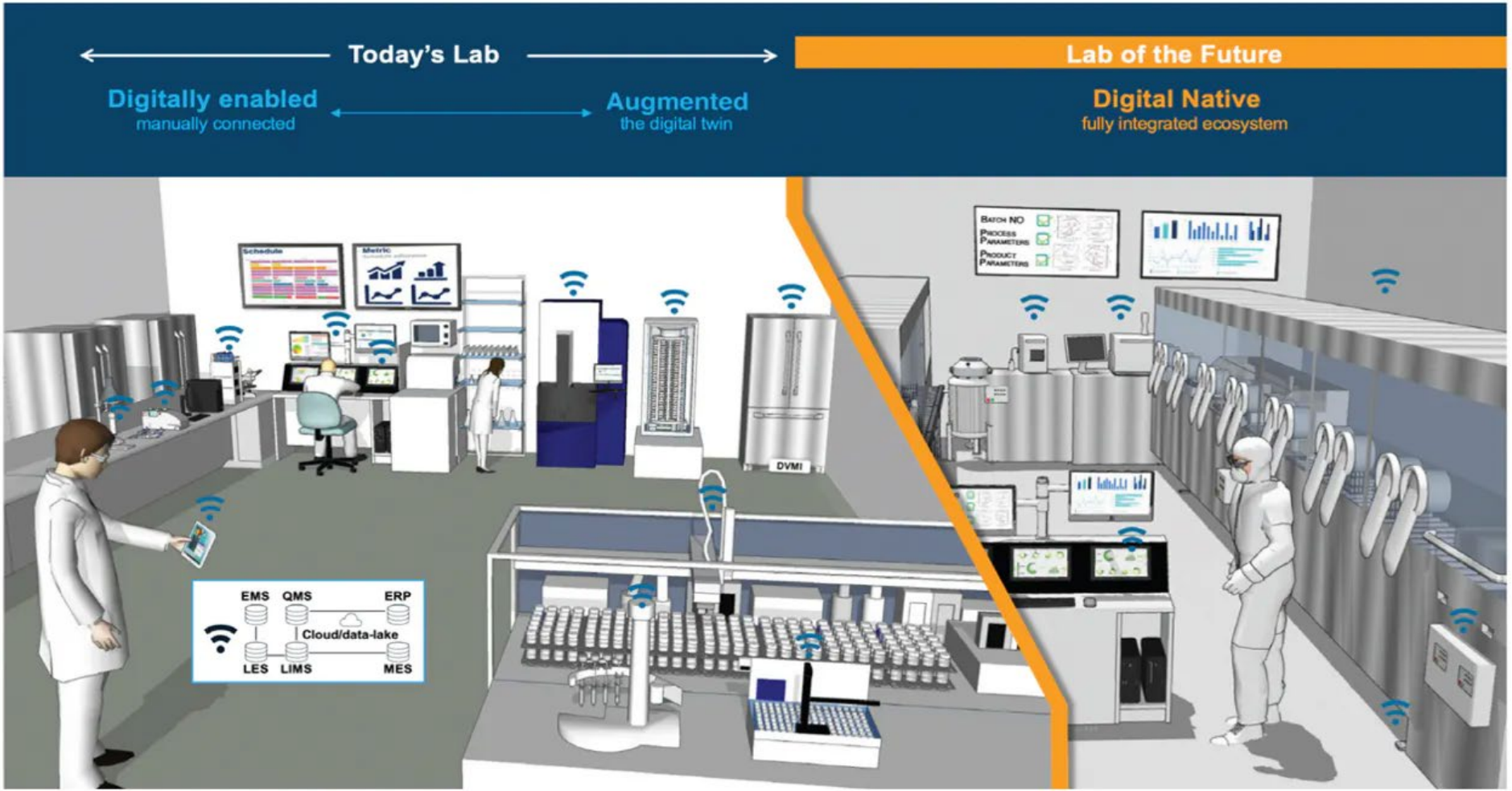
Artificial Intelligence Informs Decisions

Automate diagnostic processes, identify hidden risks, and personalize treatment plans in real-time.

Machine Learning Improves Over Time

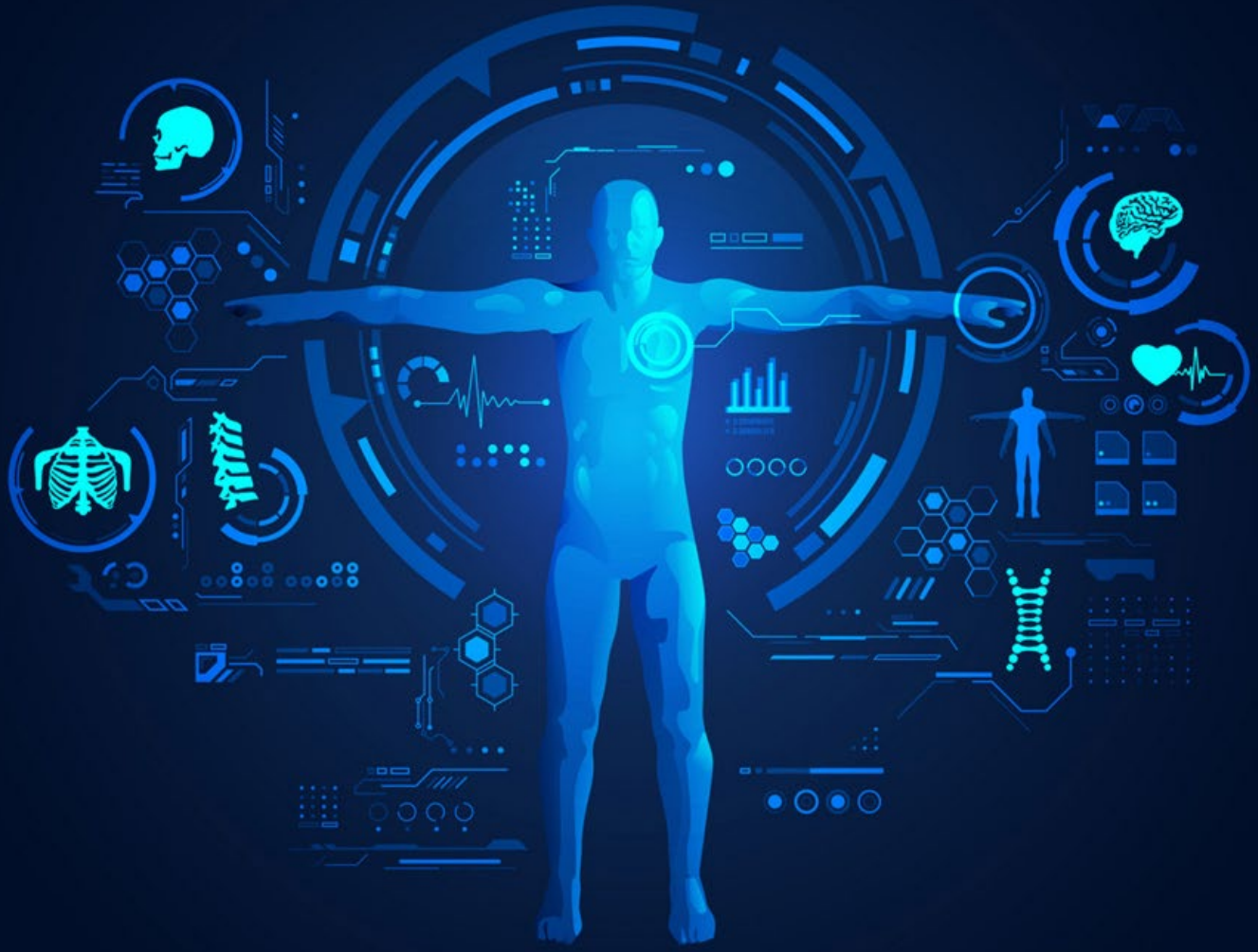
Predict patient outcomes and disease progression with advanced algorithms.

Uncover hidden patterns and correlations in clinical data for better decision-making.



Source: PharmExec.com. (2023, August 16). Inside the Lab of the Future: How Advanced Technologies and Optimized Lab Informatics Can Turn Scientific Data into a Valuable Business Asset. Retrieved from pharmexec.com

The Digital Twin



Examples of AI and ML value to your lab

Artificial Intelligence Informs In Patient Care

Acts like a smart assistant, personalizing care and automating tasks.

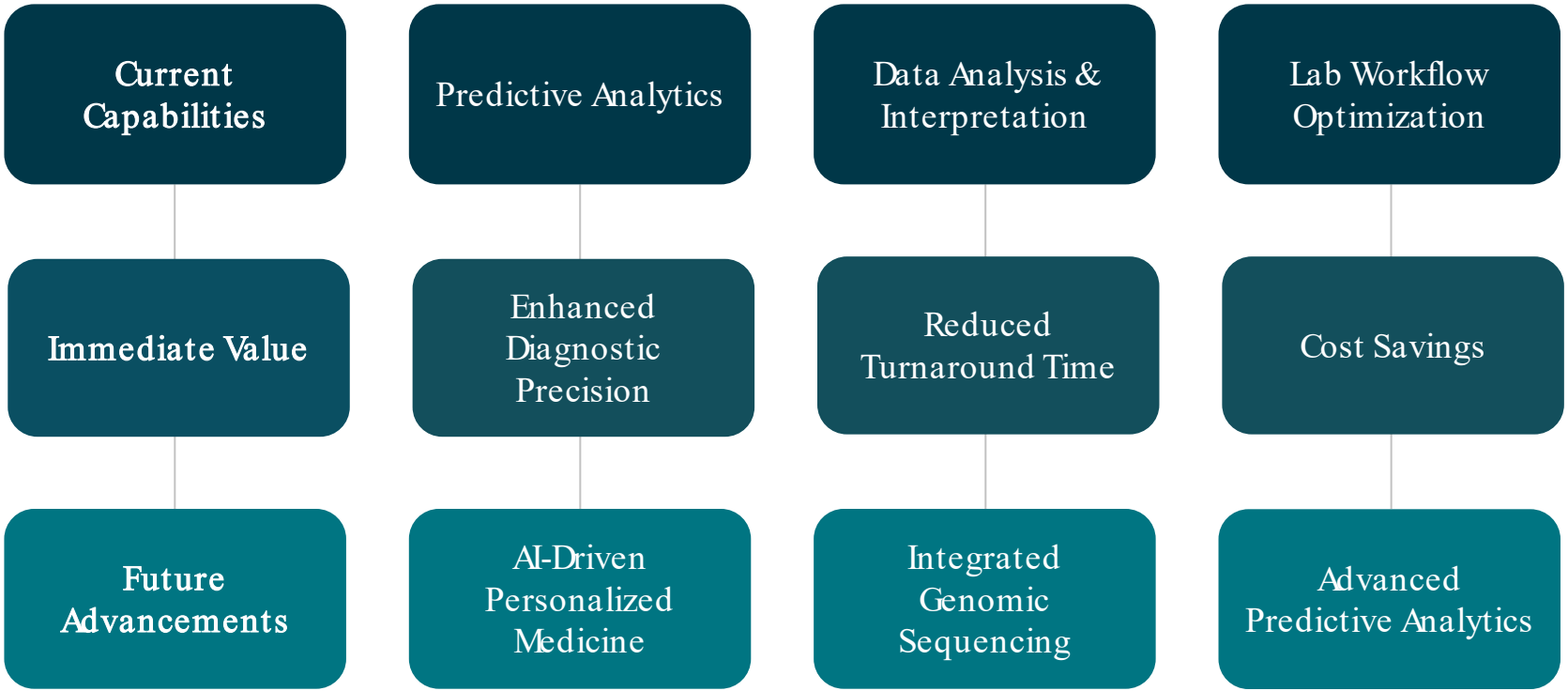
Machine Learning In Decision Support

Learns from health data to predict patient needs and suggest effective treatments.

Analyzes vast healthcare data for insights that improve engagement, decision making and efficiency.

Smart Labs Power Decision Making with AI and ML

AI and ML present a multitude of opportunities



AI Powered Precision Diagnostics

Healthcare's trial and error method is…

✗ Costly ✗ Inefficient ✗ Often fails to deliver

hc1's breakthrough precision diagnostics software leverages health data and AI to:

- **Enhance clinical outcomes**
- **Optimize expenses**
- **Catalyze scientific discovery**

Ensuring the **Right Patient** gets the **Right Test** and the **Right Prescription** at the **Right Time**

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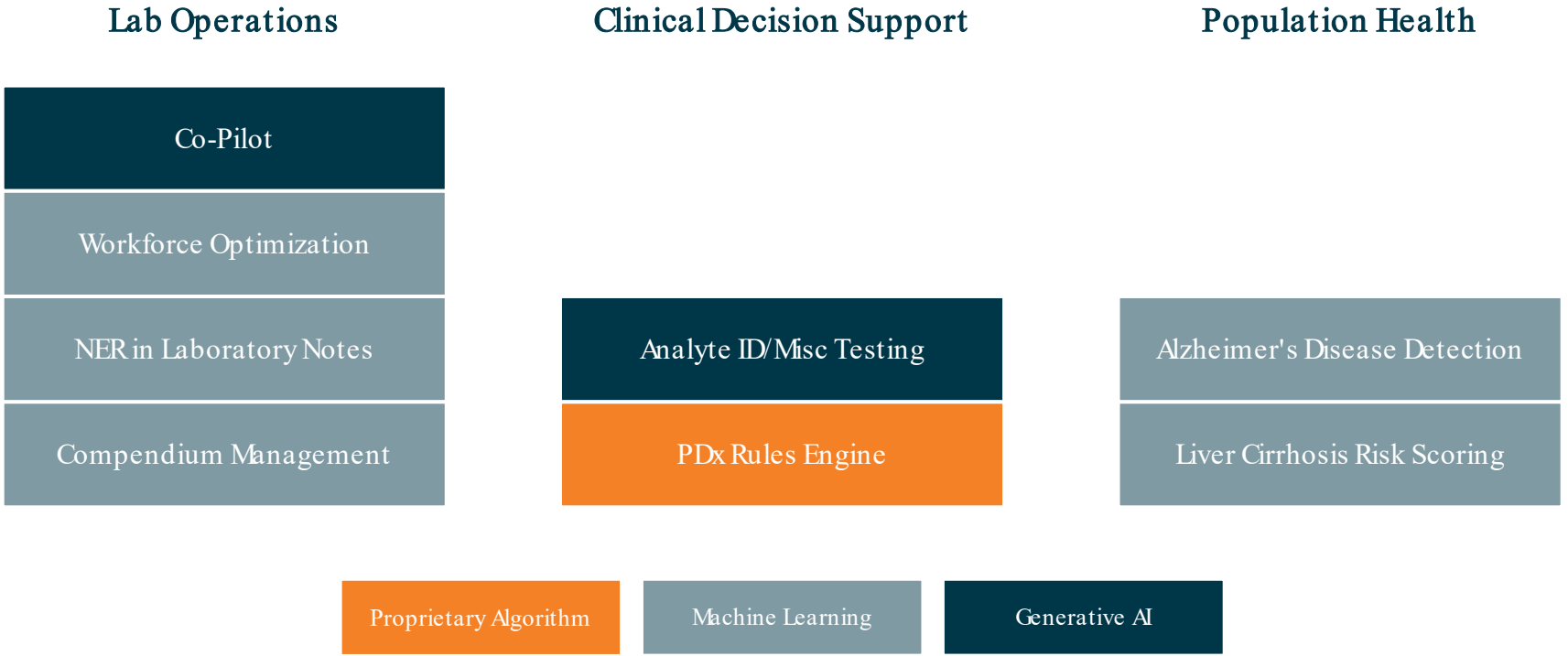
Additional examples of hc1 leveraging AI and ML



Strategies to adopt AI: The Future of Patient Care

Seamless Data Integration + **Innovative Solutions**

Clinical Lab 2.0: The Future of Patient Care

- Comprehensive patient records for actionable insights
- Adoption of AI for improved operations and population health management
- Compendium matching for test code accuracy
- Demand forecasting and predictive staffing recommendations

Harnessing AI & ML for Clinical Excellence

Strategic Evolution

- Stay ahead with AI and ML integration
- Unlock new potentials in clinical diagnostics

Beyond Efficiency

- Aim for excellence in laboratory operations
- Enhance precision and accuracy in testings

Resource Optimization

- Leverage technology to overcome limitations
- Drive cost-effectiveness and superior care delivery

Human-Tech Synergy

- Balance automation with human expertise
- Ensure compassionate care alongside technological advancement

Future-Ready Labs

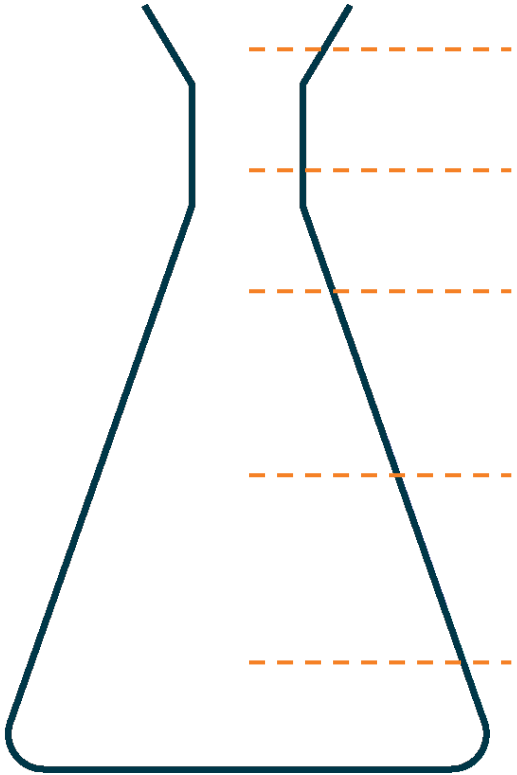
- Equip your lab for sustainability and growth
- Innovate for the healthcare landscape of tomorrow

Methodical approach to achieve max. impact

hc1 Laboratory Performance Maturity Model

Level 1	Level 2	Level 3	Level 4	Level 5
Install data governance, processes, normalization and standards	Systematize and automate lab performance analytics and customer-facing business operations	Data &analytics inform critical decision making. Lab leadership can innovate and drive data insights without IT dependency	Lab leaders have advanced tools to optimize lab operations and have evidence-based data to influence system leadership to drive clinical best practices	Lab leaders use technology to anticipate trends, issues and opportunities, proactively address future business and clinical conditions
Data Fundamentals & Infrastructure	Operations & Visibility	Data Driven Decisions	Advanced Tech Capabilities	Predict and Impact the Future

Implementing the Right AI Formula Now



1. **DATA:** Set up data lake and infrastructure.
2. **RESOURCES:** Address resource limitations.
3. **TECHNOLOGY:** Maximizing interconnection and automation.
4. **ORGANIZATION:** Build readiness for change with visionary leadership.
5. **IMPLEMENTATION:** Goal alignment &success metrics &process improvement focus.

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