



AUSTIN, TEXAS

AEC 14TH ANNUAL
HR 2024
SUMMIT

THE A/E/C INDUSTRY'S LARGEST HR CONFERENCE

The Rocky
Road to
Automation –
Might not be
so bad ...



The Rocky Road to Automation – Might not be so bad ...

Automation – the use of machines, computers, algorithms, etc. for tasks that were previously performed by humans



Artificial Intelligence – Technology that allows computers to simulate human intelligence and problem solving ability

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THE INTERNET IS AFTER YOUR JOB

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HOW WILL AI CHANGE HR?

In HR, AI is being used to manage the full employee life cycle, from sourcing and recruitment to performance management and employee development. As a result, HR professionals can spend more time advising individual employees on their career goals and challenges and serve as organizational strategists in support of business leaders. Recruitment and hiring are by far the most popular employment-related areas in which AI is used. However, AI can be utilized in almost any human resources discipline.



TALENT ACQUISITION:

Instantly identify and screen qualified candidates.



TALENT RETENTION:

Examine factors influencing employee retention.



EMPLOYEE UPSKILLING:

Enhance learning experiences for talent development.



JOB DESCRIPTION ANALYSIS:

Align applicants' resumes to keywords in job descriptions.



SKILL SET MONITORING:

Project evolving skill set needs for specific industries.



CYBER SECURITY:

Identify text patterns that indicate spam attacks.



CONTENT CREATION:

Produce large volumes of original multimedia content.



ADMINISTRATIVE SUPPORT:

Streamline administrative tasks.



OVERCOMING LANGUAGE BARRIERS:

Power more seamless multilingual customer experiences.



EMPLOYMENT RECOMMENDATIONS

Generate personalized employment or employee recommendations.



PAYROLL DECISIONS:

Analyze labor and employment data to determine payroll updates.



FINANCES AND BUDGET:

Automate accounting and budgeting while factoring risk.

IN WHICH AREAS DOES HR CURRENTLY UTILIZE AUTOMATION AND/OR AI?



79%

Recruiting & Hiring



41%

Learning & Development



38%

Performance Management



18%

Productivity Monitoring



8%

Succession Planning



4%

Promotion Decisions

GRAPHIC SOURCE: SHRM survey of 1,688 active SHRM members, February 2022.

SOURCES:

- "Generative Artificial Intelligence and the Workforce" report from SHRM and The Burning Glass Institute.
- ["Using AI for Employment Purposes."](#)
- ["Bringing Artificial Intelligence into Pay Decisions."](#)
- ["15 Ways HR Can Use ChatGPT to Improve Hiring and Engagement."](#)
- ["The Role of AI in Retaining Top Talent."](#)

My Confession ...

addict 1 of 2 **noun**

ad·dict ['a-\(.\)dikt](#)



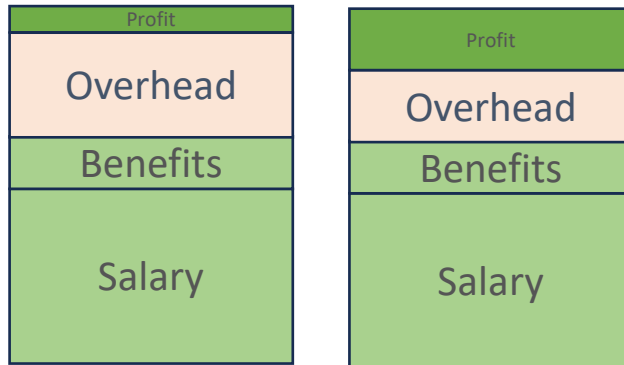
"OF COURSE, I'M RELAXING. I'M ON VACATION. GOT MY FLIP-FLIPS ON AND I'M LOUNGING ON THE BEACH."

The Rocky Road to Automation – Might not be so bad .

We are creatures of habit –
.... don't let habits kill you



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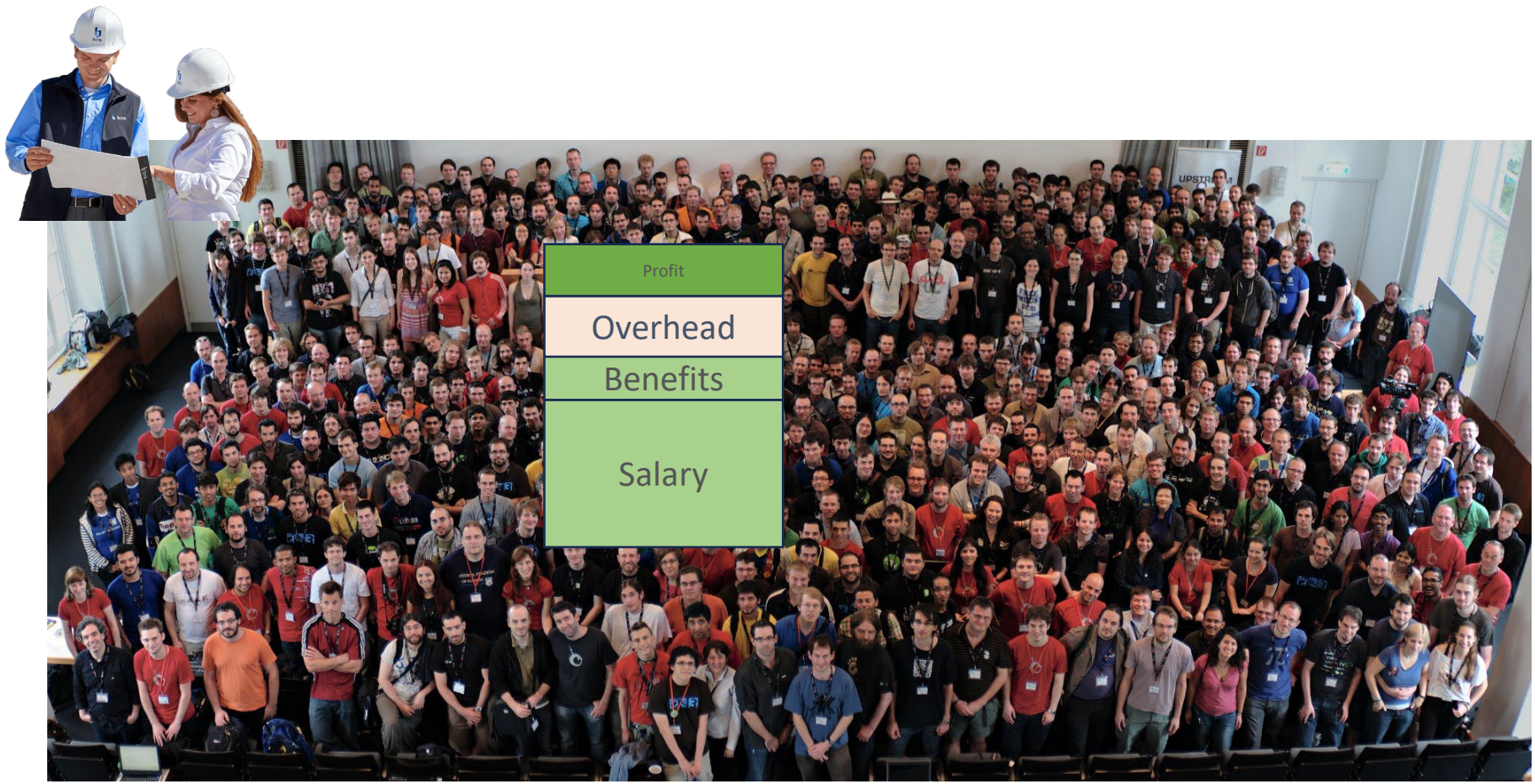
Overhead

- Your Workstation
- Your Tools
- Your Office/HVAC
- Your Insurance
- **Unbilled Hours**

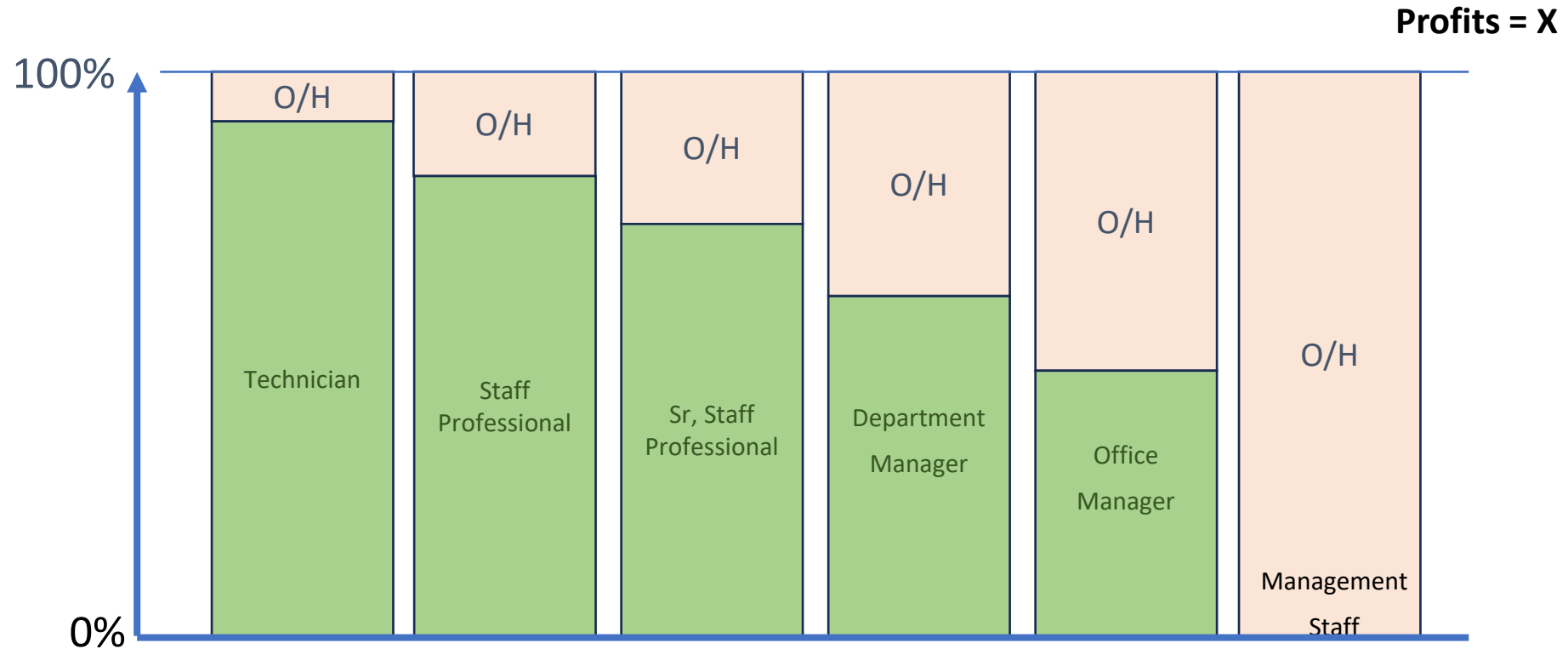
Chargeability

The number of hours an employee charges, as a percentage of their full-time hours.

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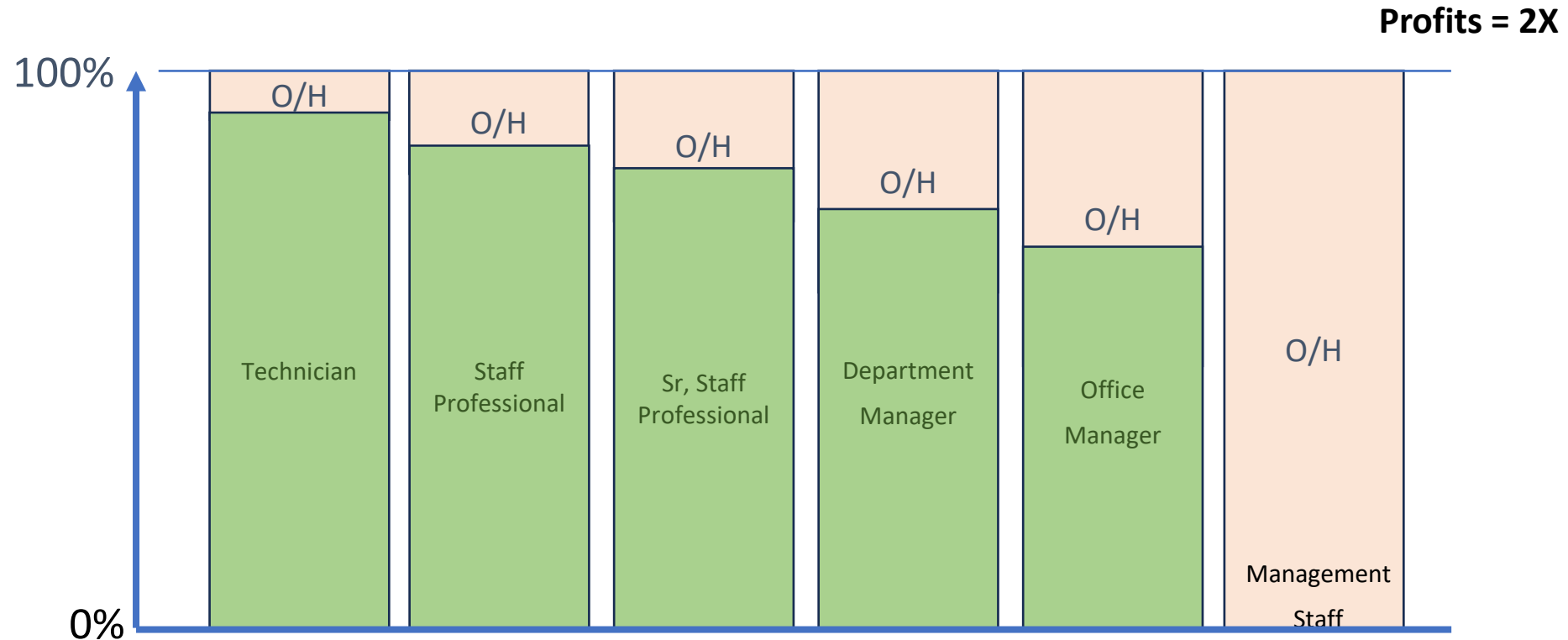
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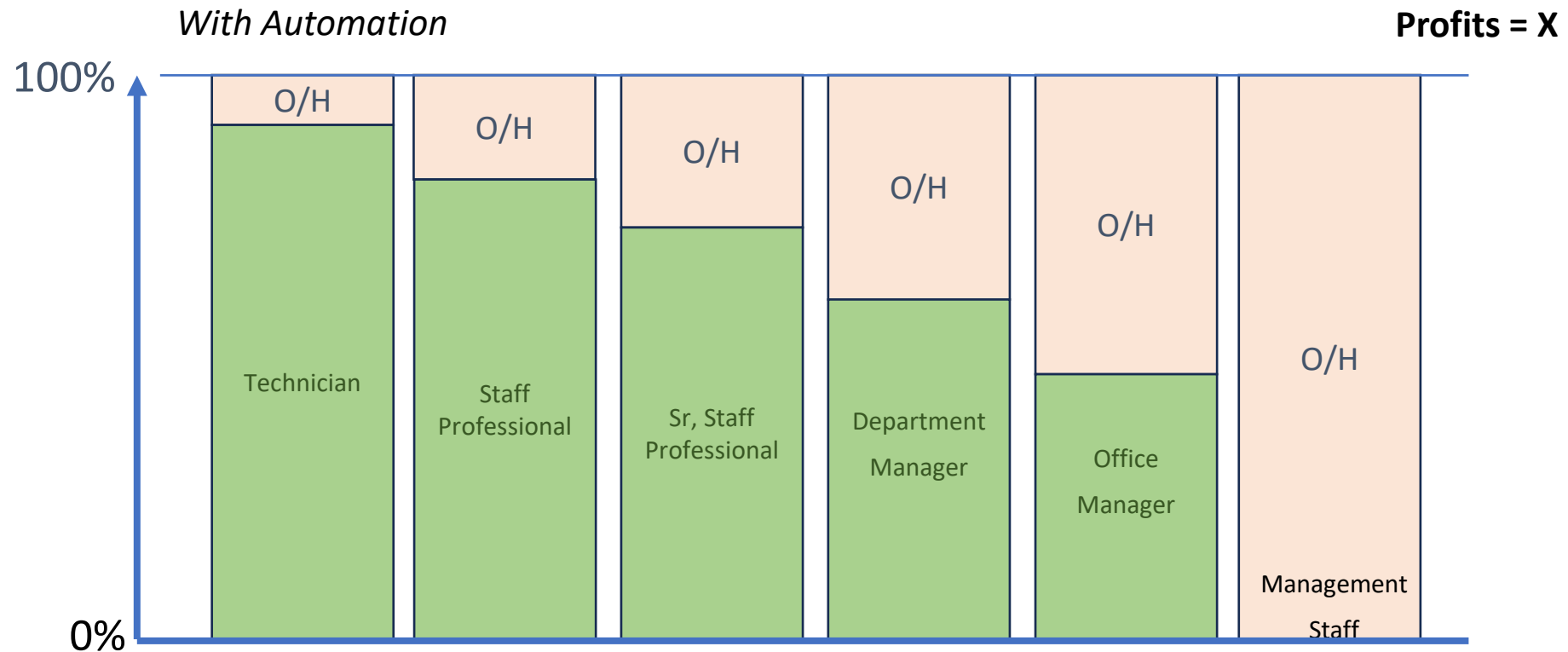
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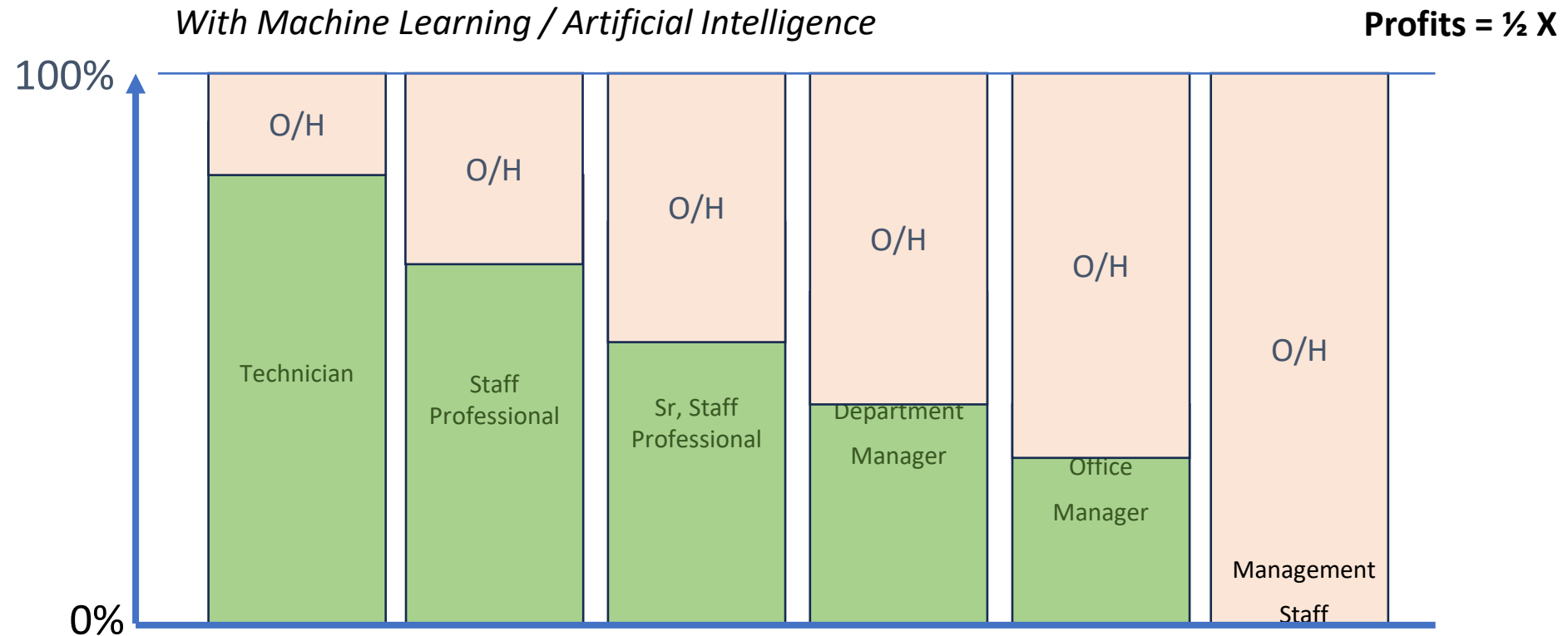
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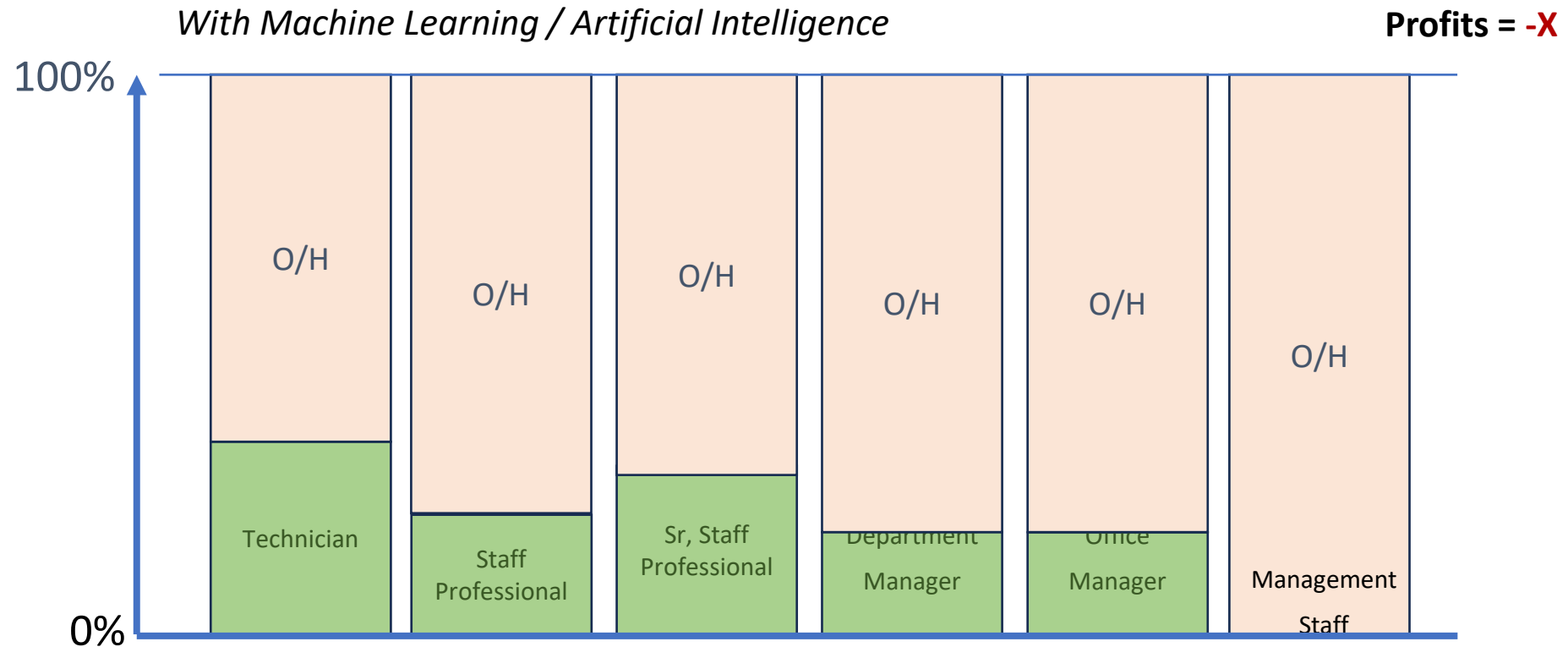
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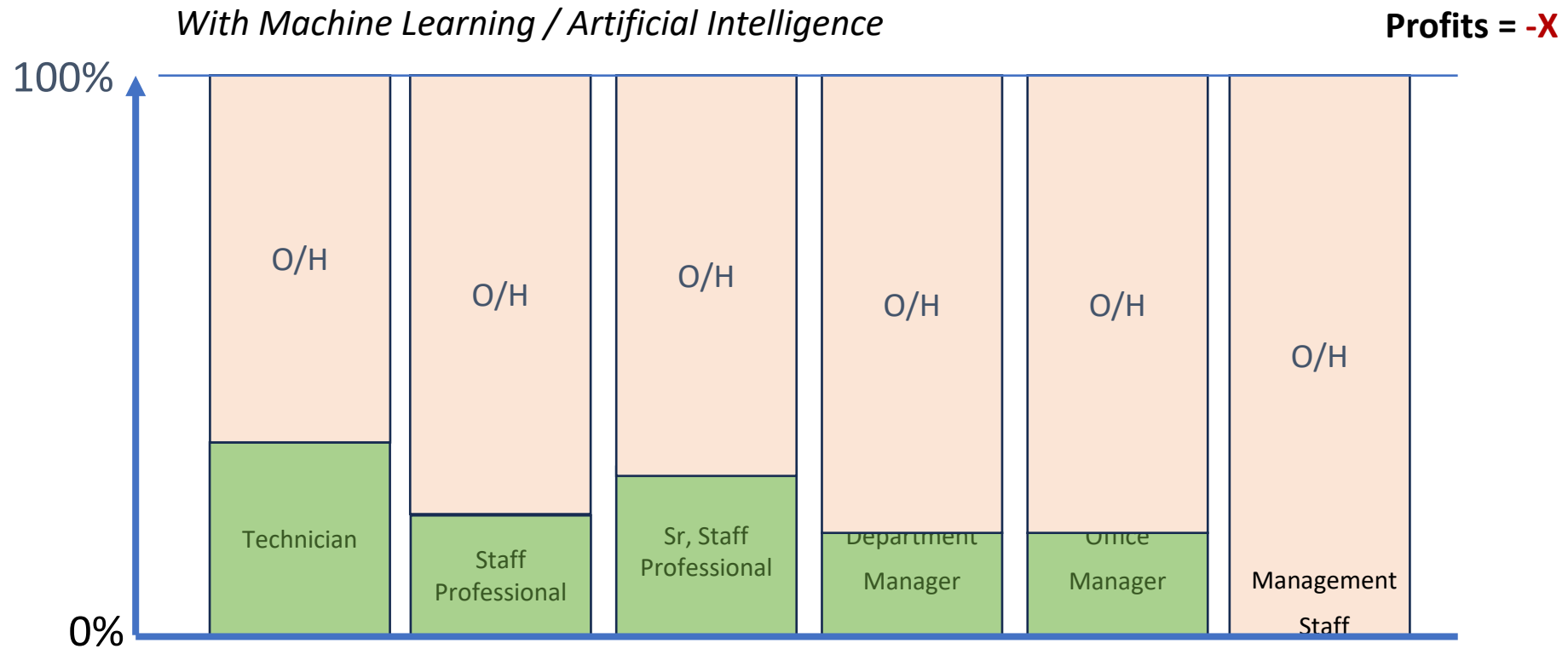
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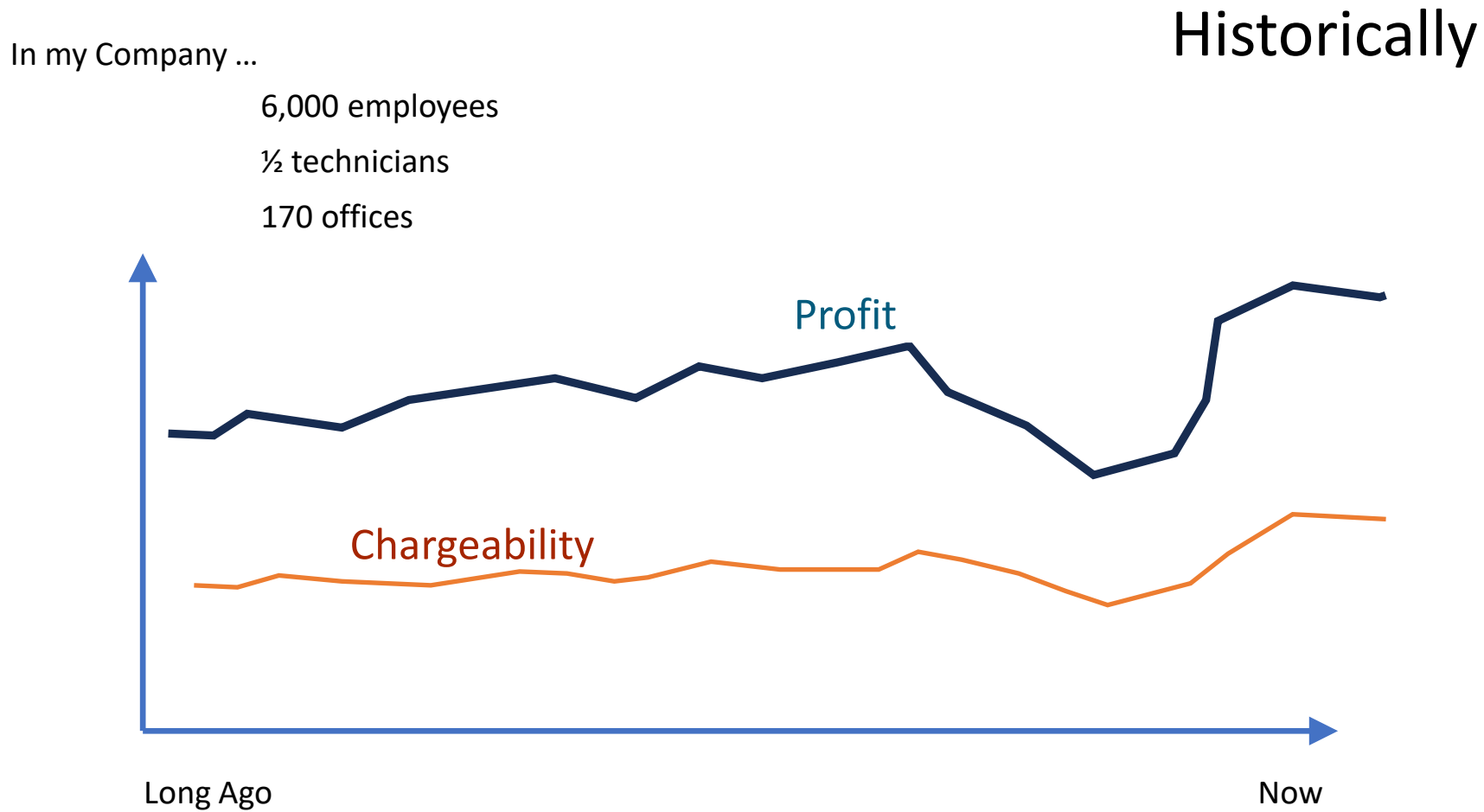
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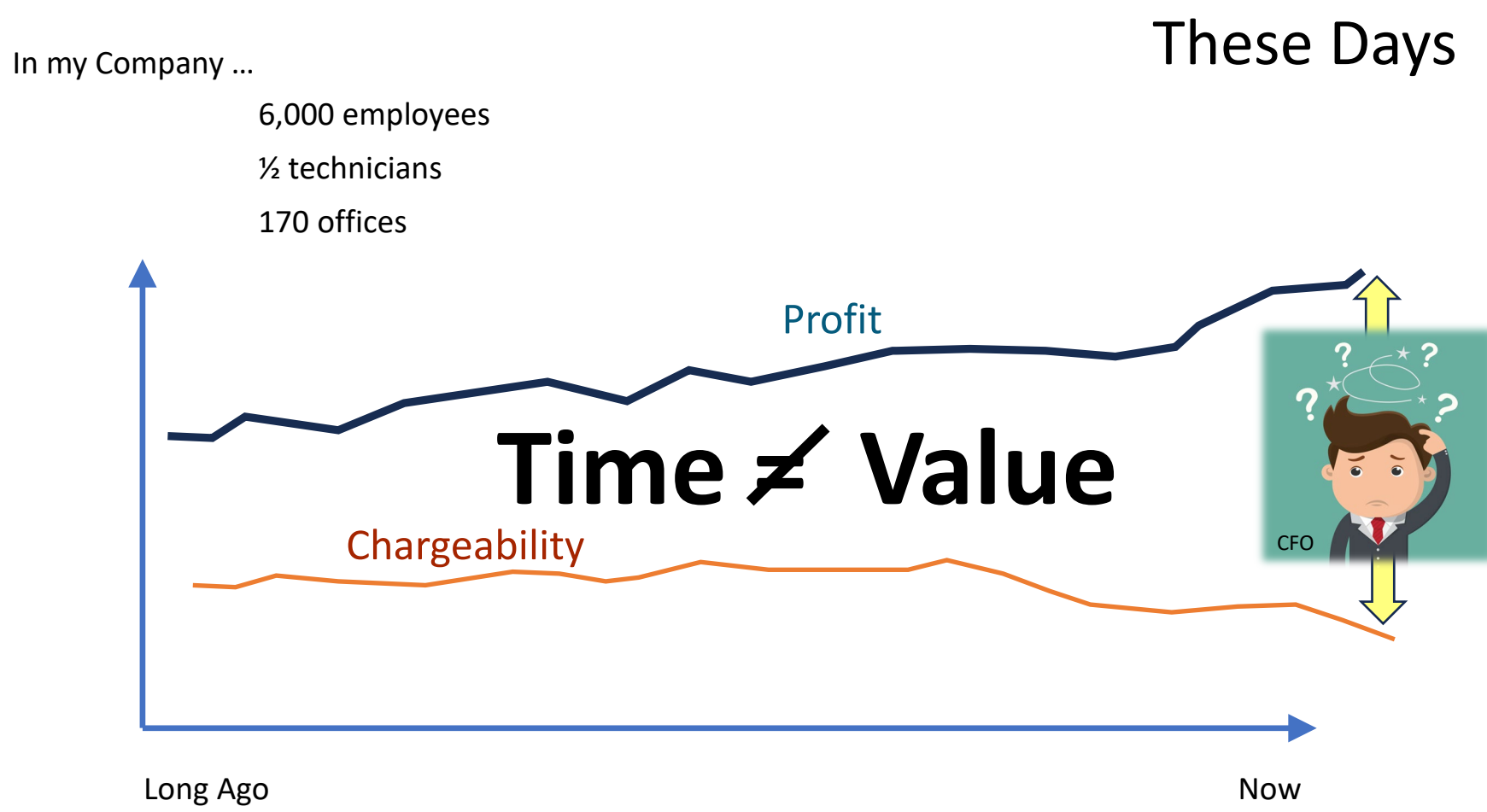


Turn O/H into OH!

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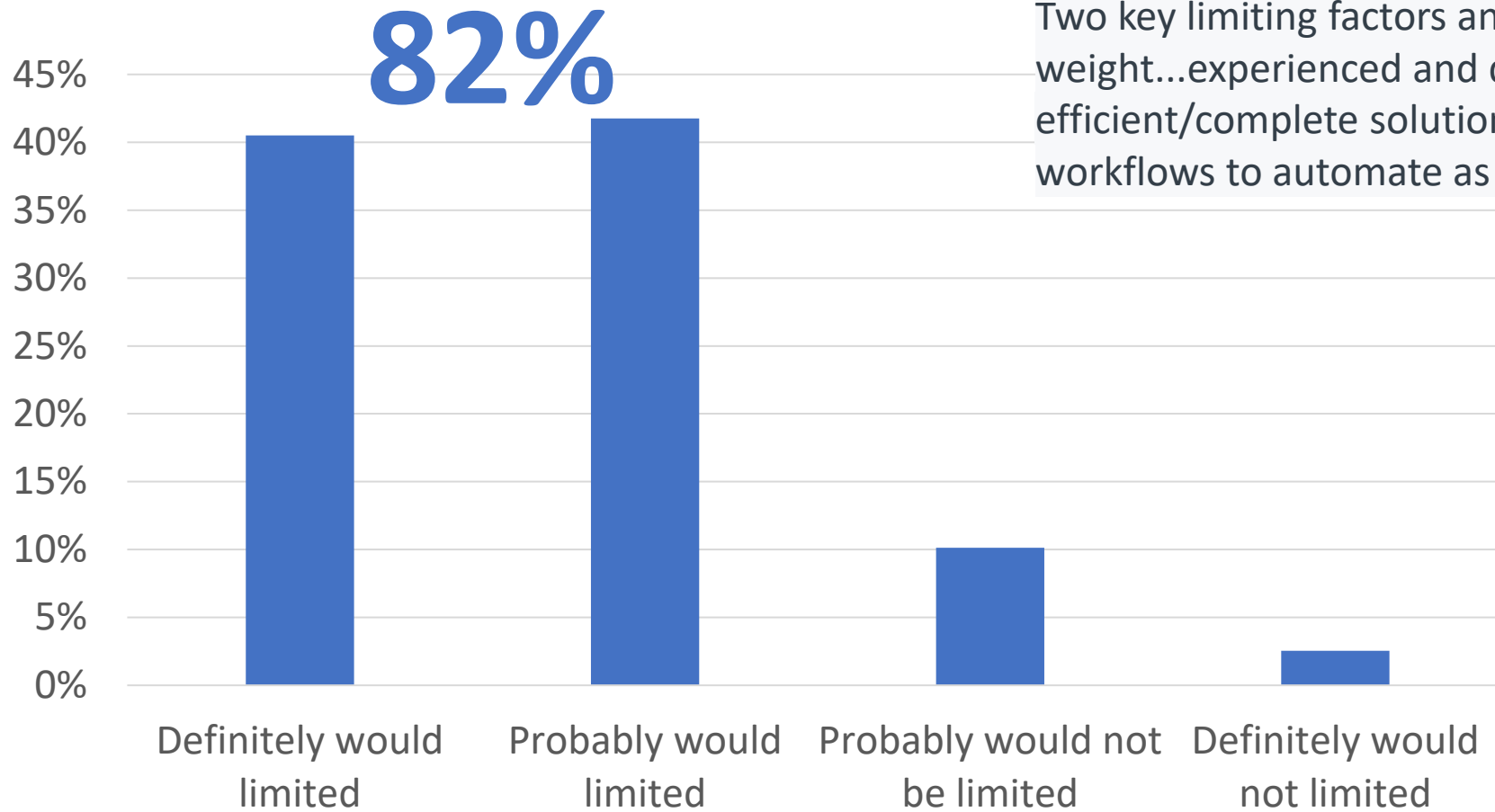
The Rocky Road to Automation – Might not be so bad ...



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Our ability to meet our clients' needs and get our work done will be limited by the available experienced or qualified workforce.

Office Manager Survey

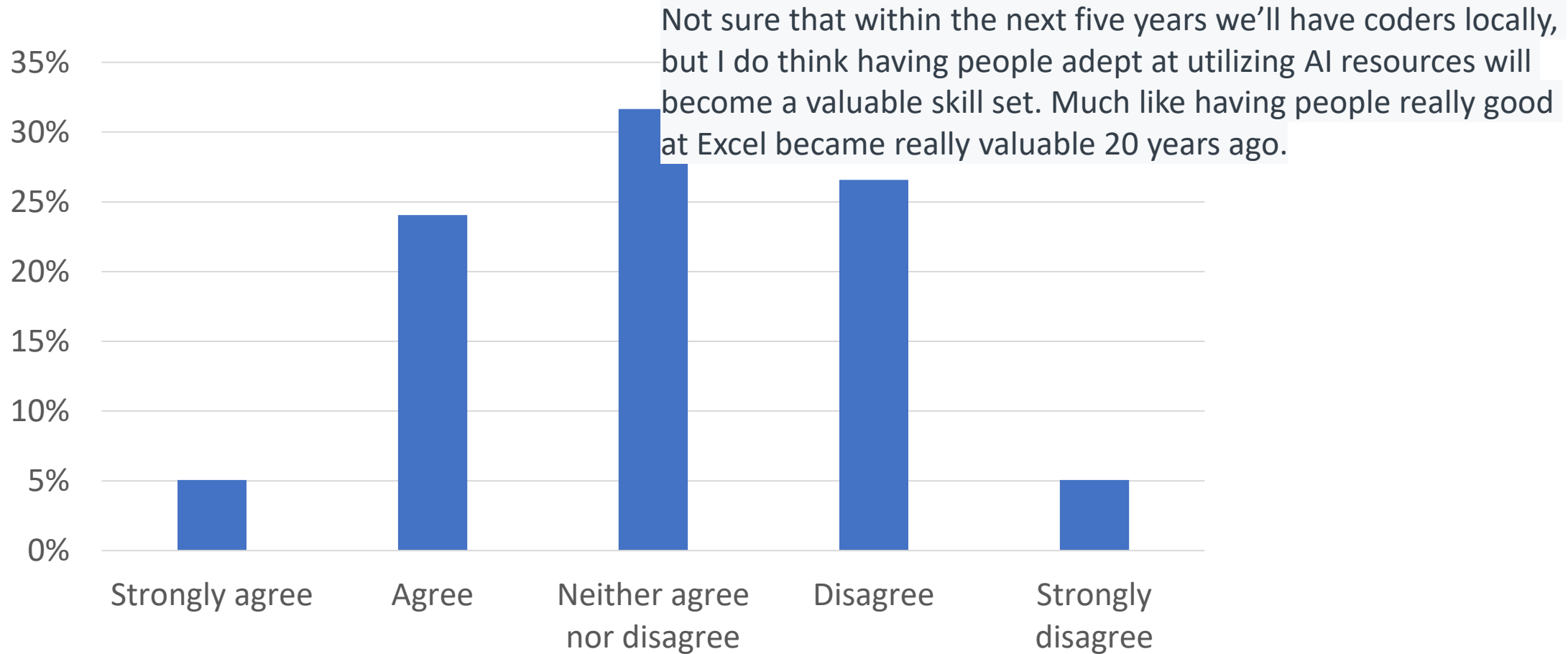


Two key limiting factors and I feel they carry equal weight...experienced and qualified workforce and efficient/complete solutions and system-managed workflows to automate as much effort as possible

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In the next five years, the workforce in my office will be made up of much more highly variable professionals, such as data scientists, coders etc....

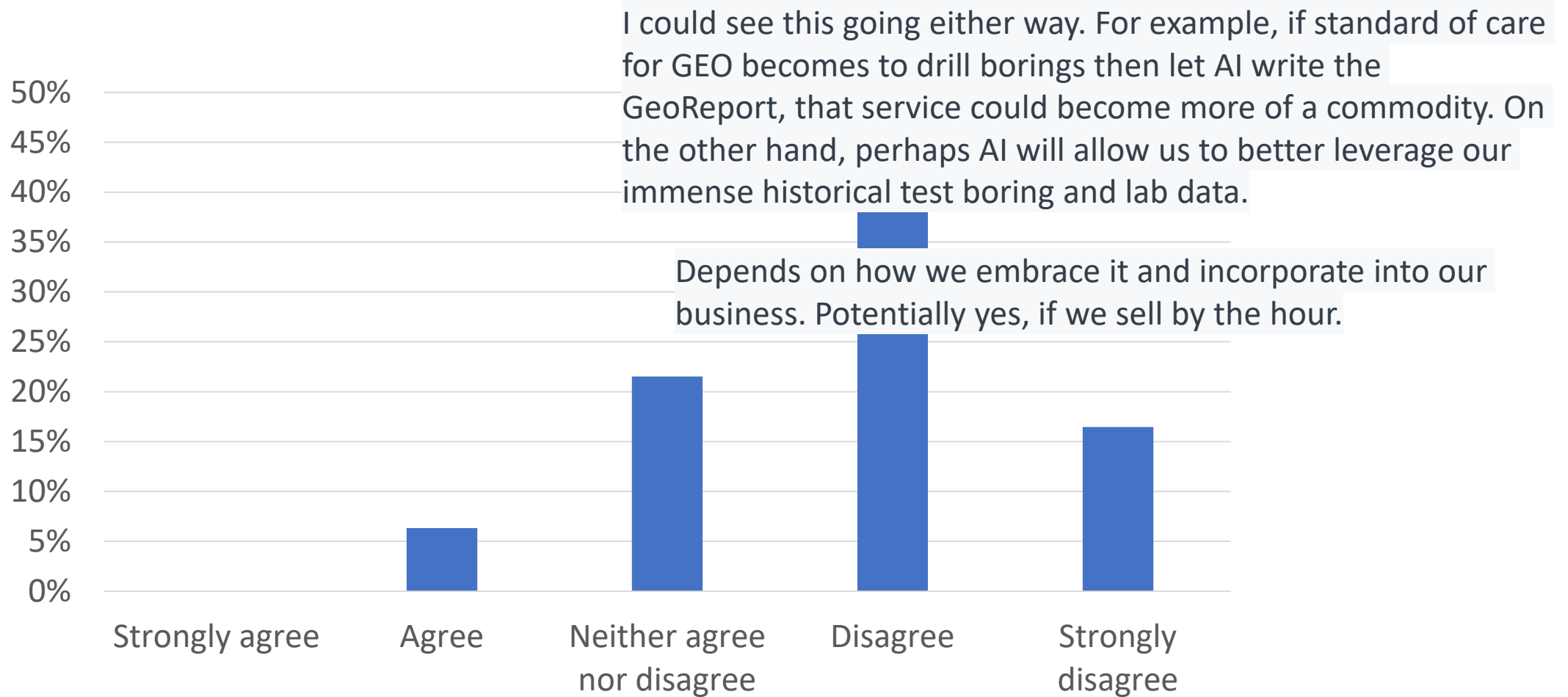
Office Manager Survey



The Rocky Road to Automation – Might not be so bad ...

AI will be a major negative impact to Terracon's profitability.

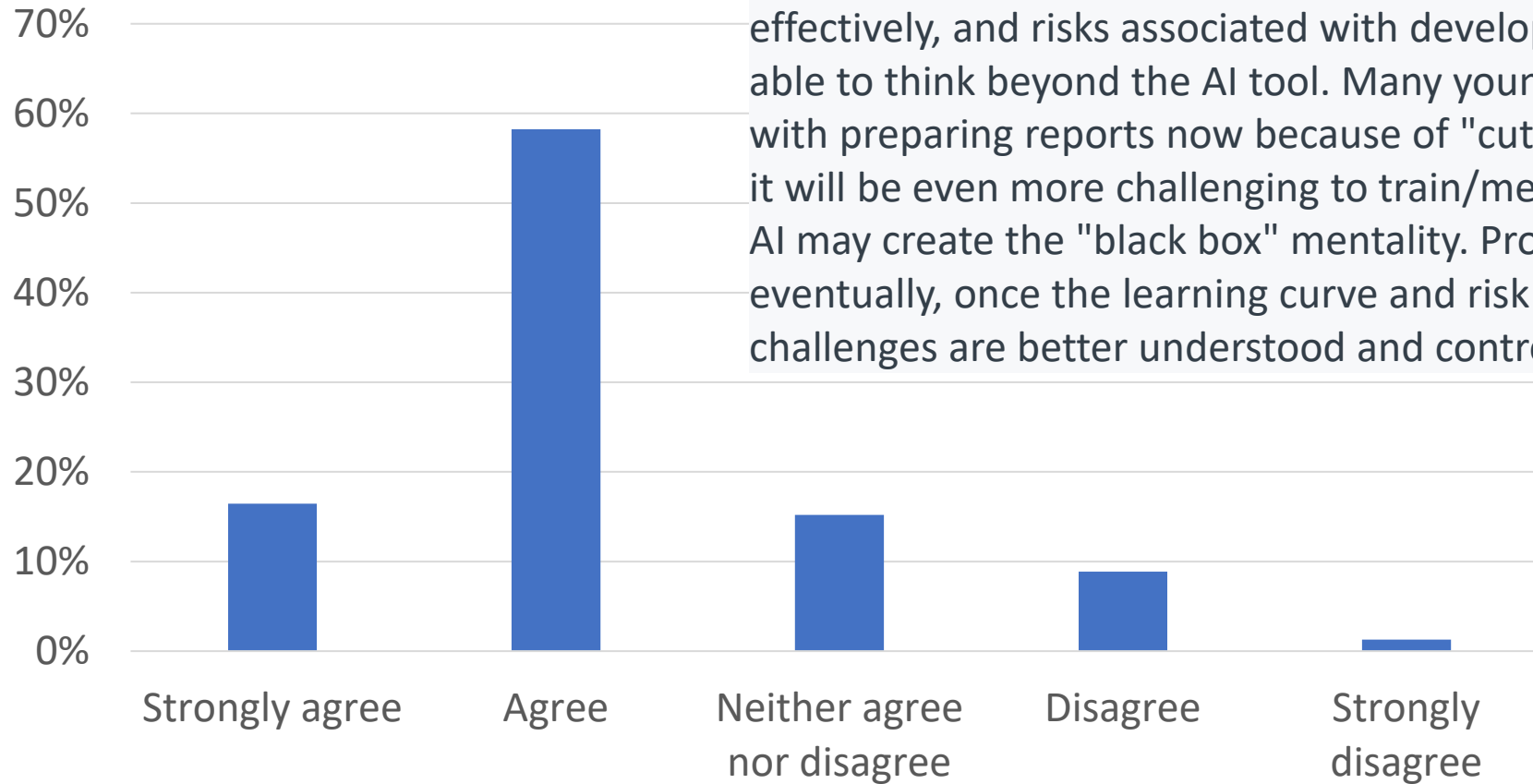
Office Manager Survey



The Rocky Road to Automation – Might not be so bad ...

AI will be a way for Terracon to increase profitability.

Office Manager Survey



I think AI will be a valuable and necessary tool moving forward; however, there are challenges associated with using this tool effectively, and risks associated with developing engineers that are able to think beyond the AI tool. Many young engineers struggle with preparing reports now because of "cut-paste" syndrome and it will be even more challenging to train/mentor engineers when AI may create the "black box" mentality. Profitability will improve eventually, once the learning curve and risk management challenges are better understood and controlled.

The Rocky Road to Automation – Might not be so bad ...

AI, It's real, it's massive, and It's coming fast
So, what can we do about it?

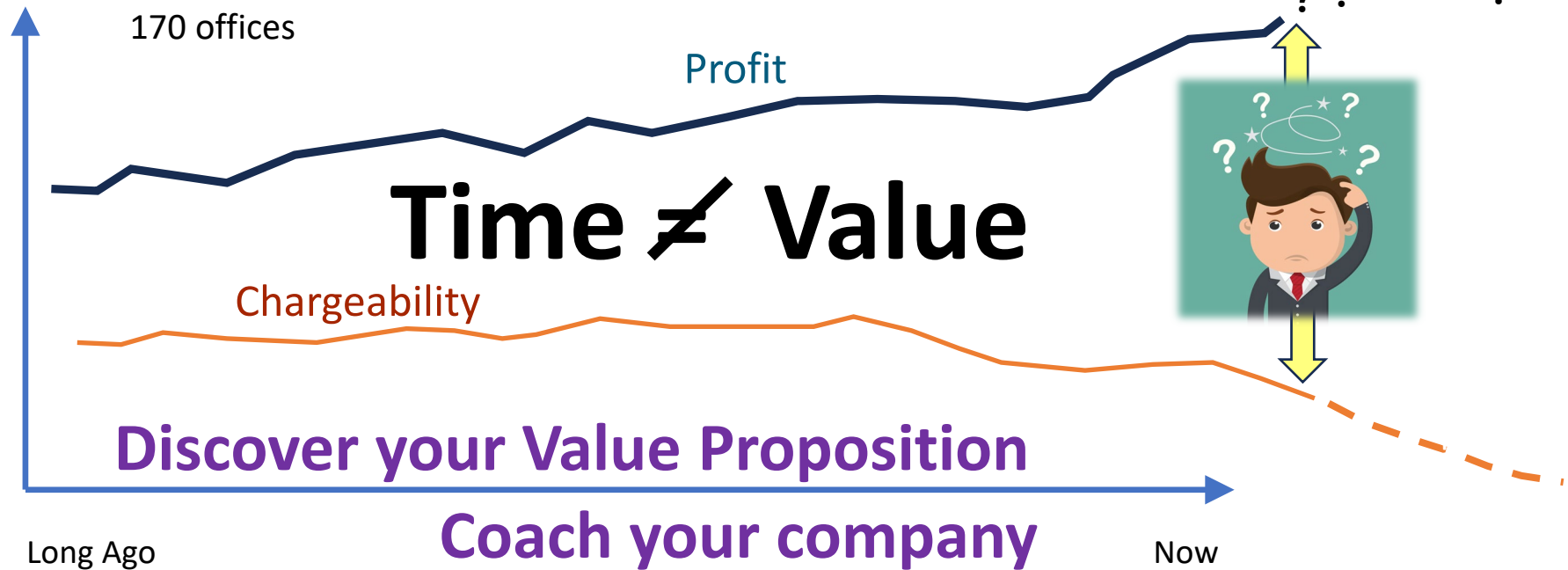
These Days

In my Company ...

6,000 employees

½ technicians

170 offices



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AI, It's real, it's massive and It's coming fast
So, what can we do about it?

- Redefine the value of the employee
- ... and their role in creating value for the client
- Forget Chargeability (seek therapy for your addiction)
- **INSTEAD ... Track Net Revenue Multiplier**
(Revenue generated per employee \$ spent)
- Discover your data
- Learn how to sell software and/or subscriptions (tremendous innovation accelerator)
- PIVOT (literally we bought a company named Pivvot!)
- Set Fees based on % of <something>
(TOTAL VALUE OBTAINED BY PURCHASE)



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Opportunity Radar

Excellence in Citizen / Customer Experience

- Digital Commerce
- Customer Experiences
- New Tech Driven Products

Productivity & Efficiency Upgrades throughout the Back Office

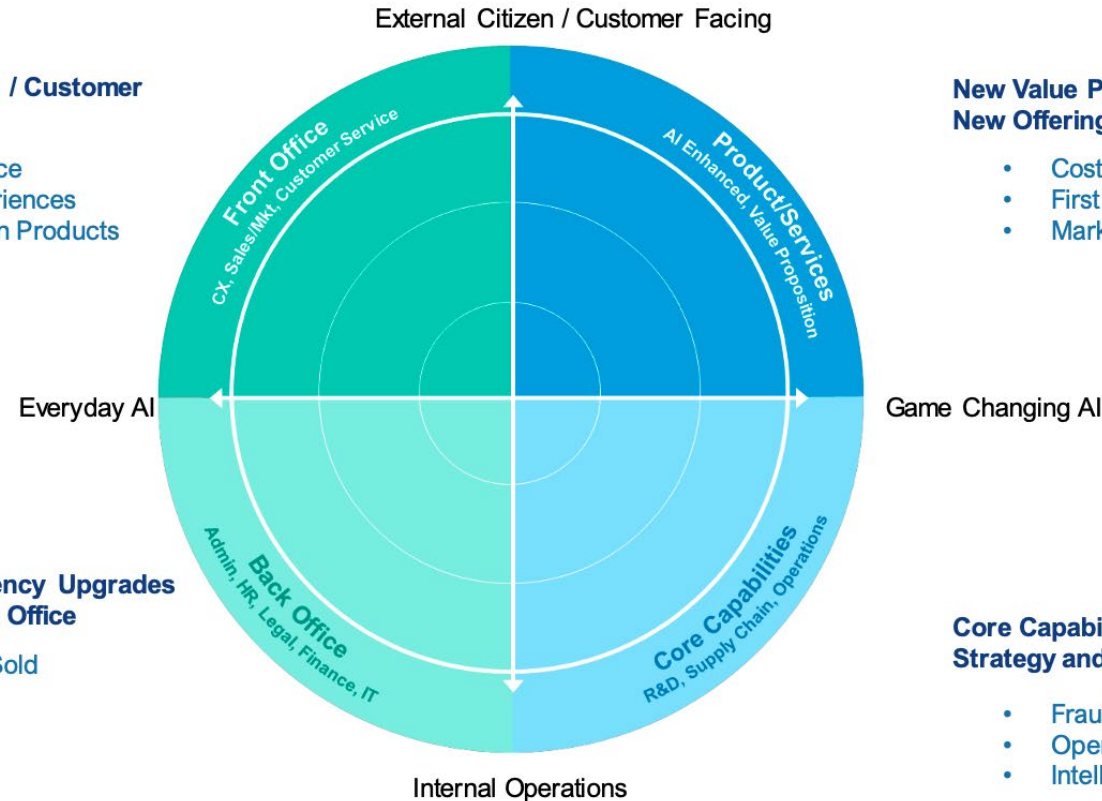
- Cost of Goods Sold
- Cost of Sales
- SG&A

New Value Propositions that Lead to New Offerings and Business Models

- Cost to Execute
- First Mover Advantage
- Market Conditions

Core Capability Innovation In Key Strategy and Operations

- Fraud
- Operational Effectiveness
- Intellectual Property



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Your Great AI Idea(s)

Should you?

- Alignment
 - Consistent with Strategic Plan
 - Complementary Initiatives
- Demand
 - Customer Needs
 - Timing Time to Market
 - Inevitability
- Differentiation
 - Consistent with Value Proposition
 - Unique to our Capabilities
- Financial Success
 - Cost to achieve MVP
 - Time to Profit
- Competing Priorities
 - Enhance or Detract?
 - Expedite or Delay?

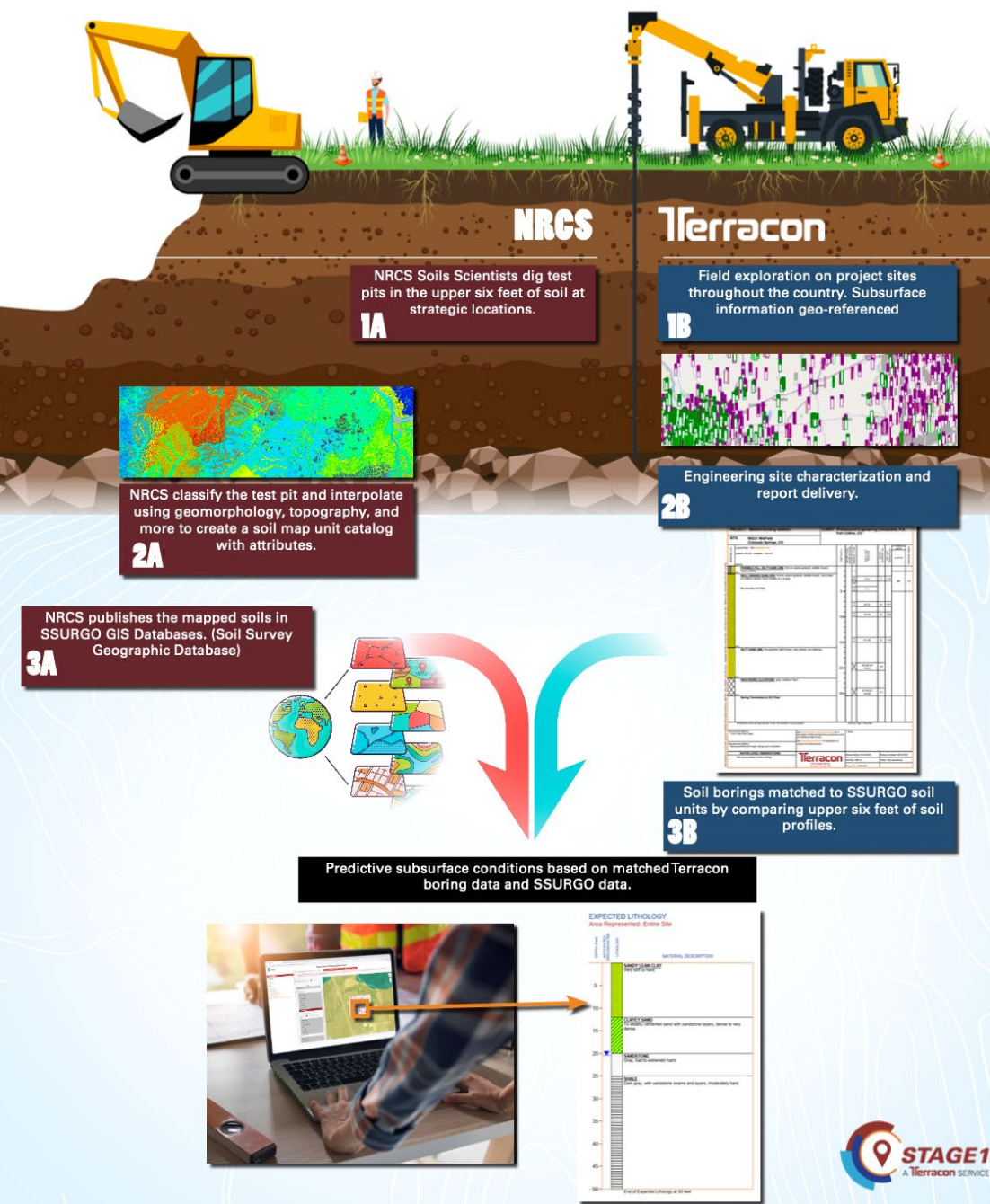
Could you?

- Execution
 - Do we have the talent?
 - Can we dedicate the time?
 - Can we outsource?
- Risk
 - Security
 - Reputation
 - Standard of Care
- Affordable
 - Impact on operations
 - Downside risk
- Adoption
 - Consistent with culture?
 - Supporters/Detractors
 - Who takes it to the market?

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PREDICTIVE SOIL CLASSIFICATION



A groundbreaking approach that takes the guesswork out of estimating soil conditions on unexplored sites by leveraging advanced geospatial technologies, millions of historical exploration records, and national soil maps

Unearthing the nexus: Virtual Soil Profile for De-risking Projects

Rob Hernandez, Ian Sleeper, Colby Smith



Intro

Virtual Soil Profile (VSP) combines millions of subsurface exploration records with the expertise of thousands of geotechnical experts and the nationwide coverage of the federal soil survey database using advanced geospatial analysis.

Methods

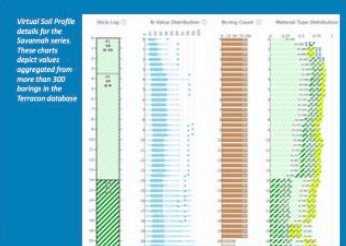
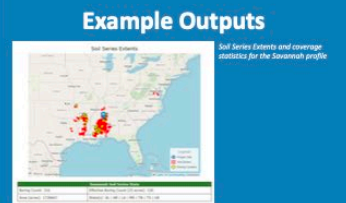
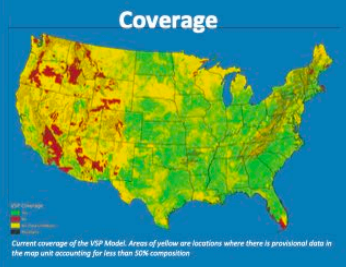
1. Identify soil map units on site
2. Locate similar map units
3. Locate boreholes in those map units
4. Boreholes means deeper data
5. Average grouped borings
6. Apply average conditions to site

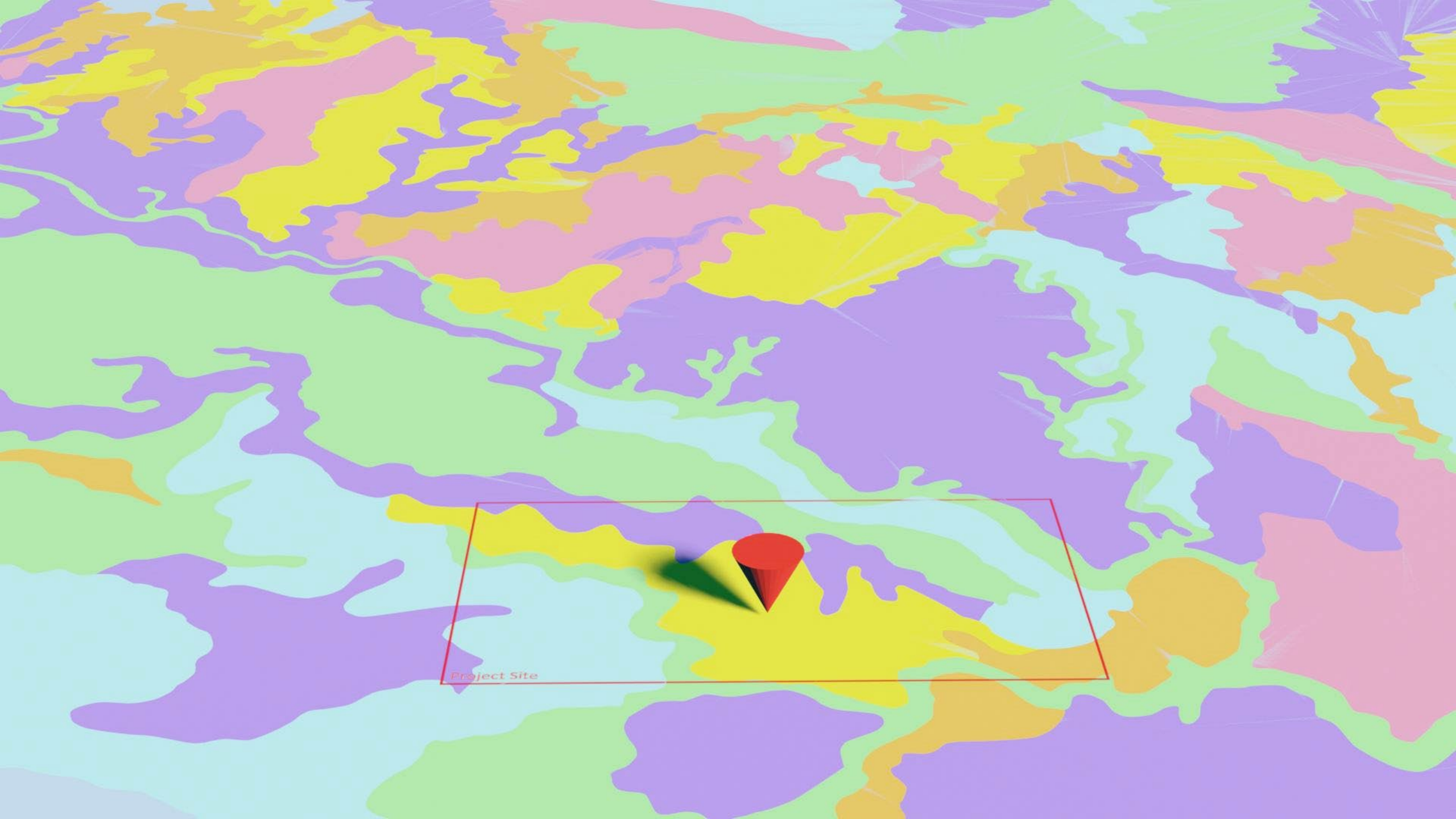
Results

- Variogram analysis shows VSP is more effective than just using the closest borings
- VSP provides real engineering parameters to the average depth of prior exploration
- VSP aligns with real borings most the time in blind comparisons

Discussion

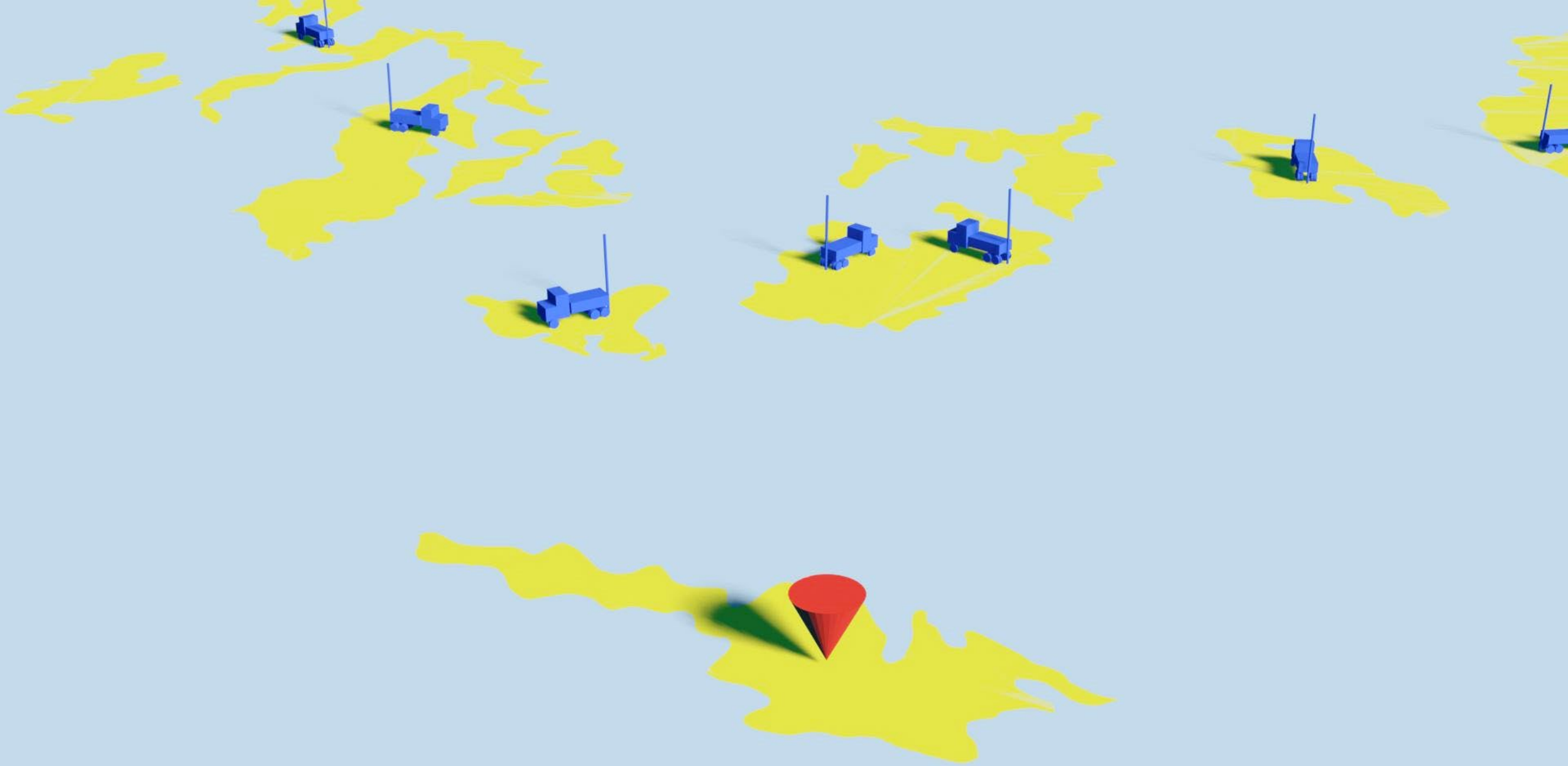
- Better desktop geotechnical consulting
- Less contingency in early-stage
- Derive thematic maps like Depth to Restrictive Layer
- Identify showstopper conditions deeper than SSURGO

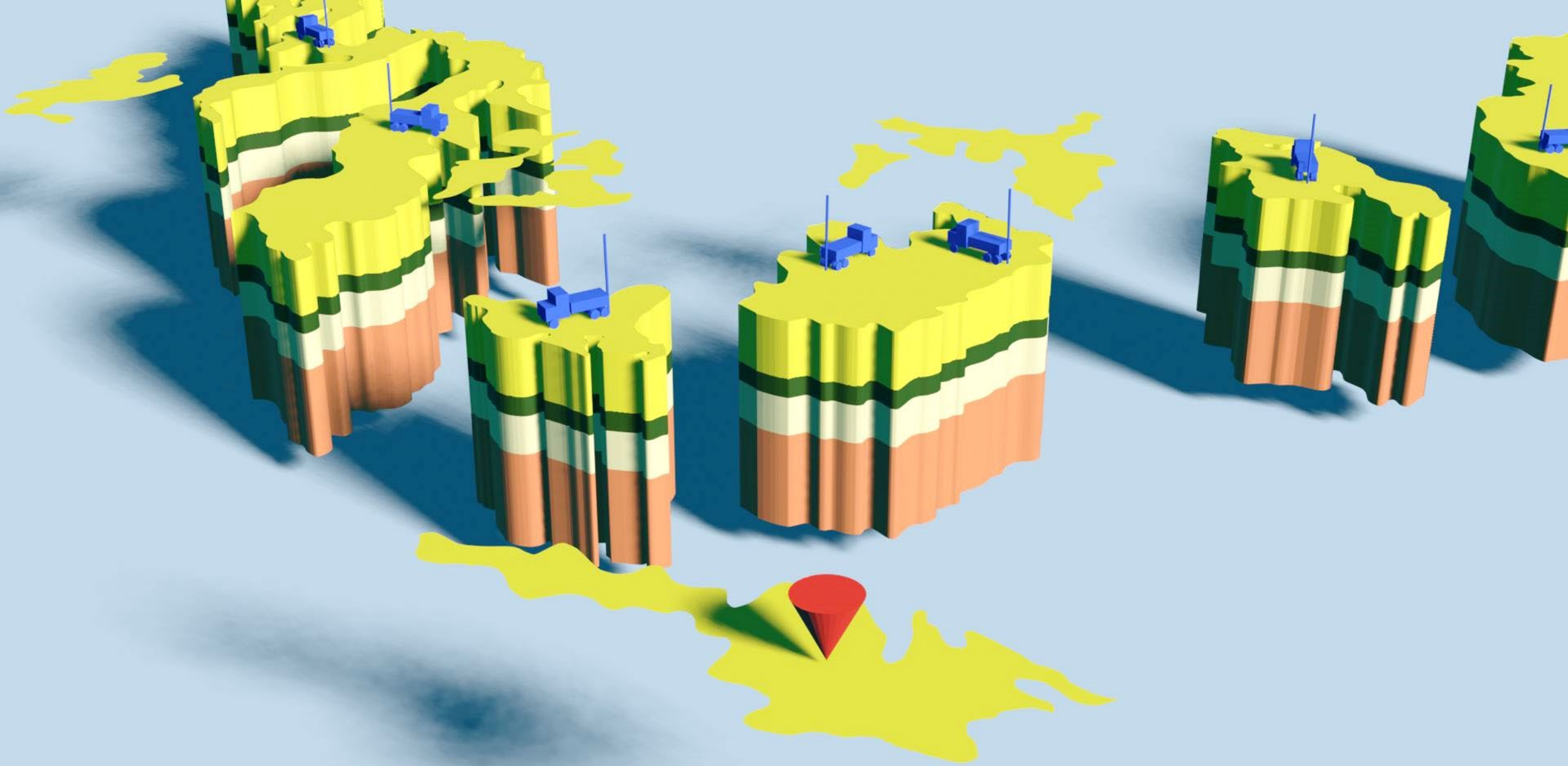




Project Site











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