

Abstract

Looking around, it's easy to conclude that we're well into the era of AI-first product development, or at least well into the era of the AI-first buzzword onslaught. We hear about machine learning, with its thirst for vast, pristine datasets has changed the way we think about and store data in our systems. The compute-hungry nature of many AI algorithms has changed how we think about cloud and edge computing in our systems. Generative techniques have even invaded the IDE, whiteboard, and email client, changing how we work and collaborate.

One area of software development that seems relatively inviolable is product discovery. AI can never replace a conversation with our users, nor is it capable of designing and conducting studies on its own. And yet, maybe AI should change how we do discovery. In this talk we'll examine how designing an AI-first product influences the product discovery process. Specifically, we'll see:

- How the autonomous and data-first nature of AI changes interaction studies
- Why accommodating the possibility that your product isn't technically feasible is different from other feasibility concerns
- What activities can help you surface the right level of information to provide a user to inform them without overwhelming them.
- Techniques for getting AI experts and domain experts speaking the same language

Start of Talk

Outline

- What are we talking about here
 - What's the major take away
 - What is discovery?
 - What is AI?
- AI for Discovery Productivity
 - Transcription tools
 - Measurement tools (HotJar, Scading)
 - Scaled Evaluation (Semantic analysis of text)
 - The cost of a wizard of oz style launch & LLMs
- Finding AI in Your Product
 - The AI Verbs
 - Automation as a spectrum
 - Jobs to Be Done / Service Mapping
- User Studies re: AI (the avenew story)
- Feasibility Studies and why you need them
- Outro

Everything You Wanted To Know About AI and Product Discovery But Were Afraid To Ask



Jordan Thayer
AI Strategist



JUST
ONE
THING

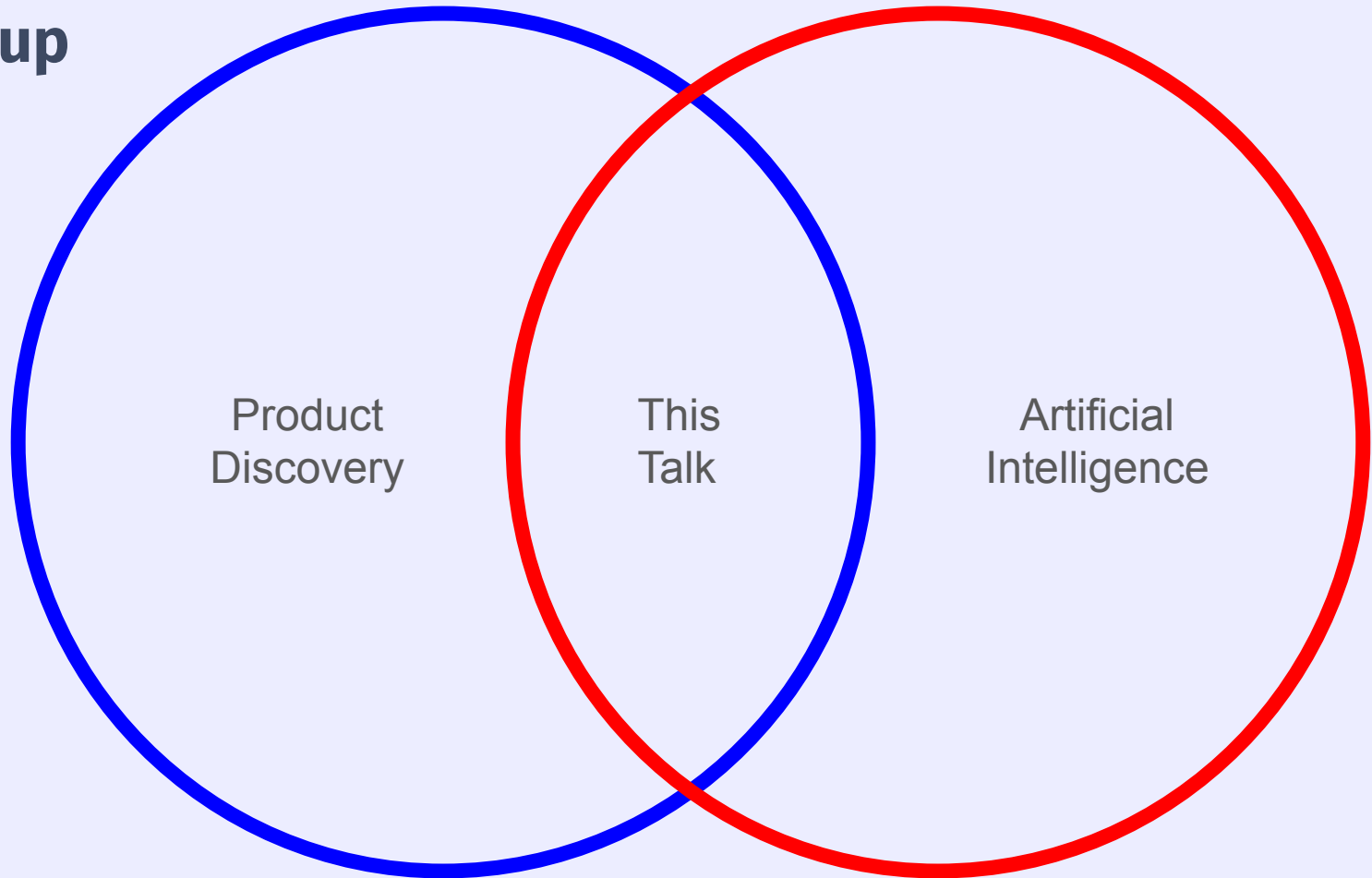
**AI changes how we make software,
but we're still making software.**



Outline

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The Setup



Level Setting: What's Product Discovery?



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What's the ***point*** of product discovery?

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What's the ***point*** of product discovery?

To Answer Questions:

- What are we building?
- For Whom?
- To what end?

Level Setting: What's Product Discovery?

What's the ***point*** of product discovery?

To Answer Questions:

- What are we building?
- For Whom?
- To what end?

Ok, but *how* do we do those things?

Level Setting: What's Product Discovery?

Structured ways of asking people about their needs and current processes so that we can understand what it is we can build to make their lives better...

While still having a job tomorrow.

Level Setting: What's Product Discovery?

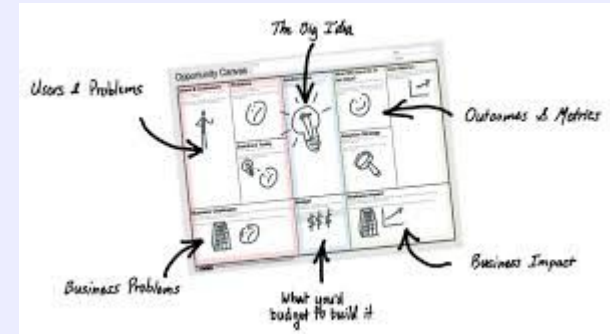
Structured ways of asking people about their needs and current processes so that we can understand what it is we can build to make their lives better...

While still having a job tomorrow.

What's that look like?

Structured conversations with key stakeholders:

- Opportunity canvases
- User Studies
- Design Studios
- Service Maps
- And Many More



Person dies	Get advice	Register death	Body disposal	Financial impact	Manage affairs	Life goes on
Told someone once/no one to deal with everything	Knew how long things will take and what I'm entitled to	Didn't need to visit registrar	Knew quickly what I can afford	Paid for the funeral w/o incurring debt	Assured things are being taken care of	Didn't owe debt post-funeral and knew what to do next
Received notification of death instantly and once	Understood where user is in journey and signposted appropriately		Provided joined up response on financial outcome and avoided debt where possible		Quickly paid users right amount, sort benefits at one go	Supported citizen with journey and next steps
Helped citizen make most appropriate choice						Received payments quickly and arranged funeral
						Not involved in death process
Notified DWP right away	Holds all info of citizens in one place	Converted old state pension	Quickly paid BSP	Paid right amount for funeral quickly and sent notifications for assurance		Suggested next steps

Level Setting: What's Product Discovery?



Level Setting: What's AI?



Level Setting: What is AI?

Artificial Intelligence can:

- Sense its environment
- Plan for a desired outcome
- Execute that plan



Level Setting: What is AI?

Artificial Intelligence can:

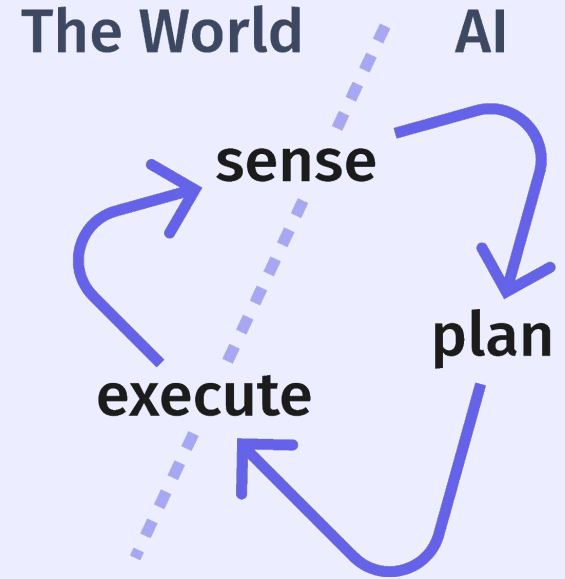
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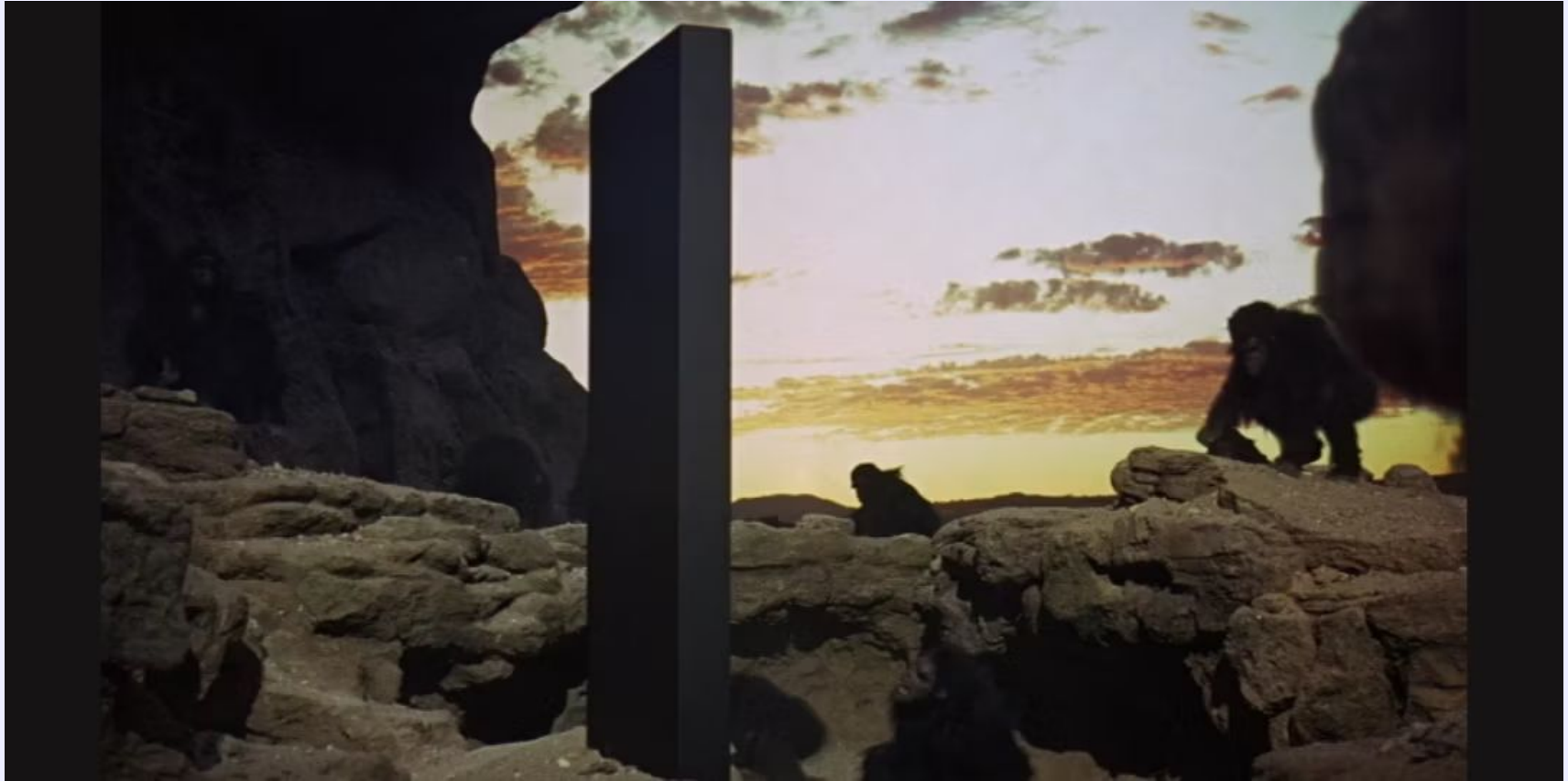
Level Setting: What is AI?

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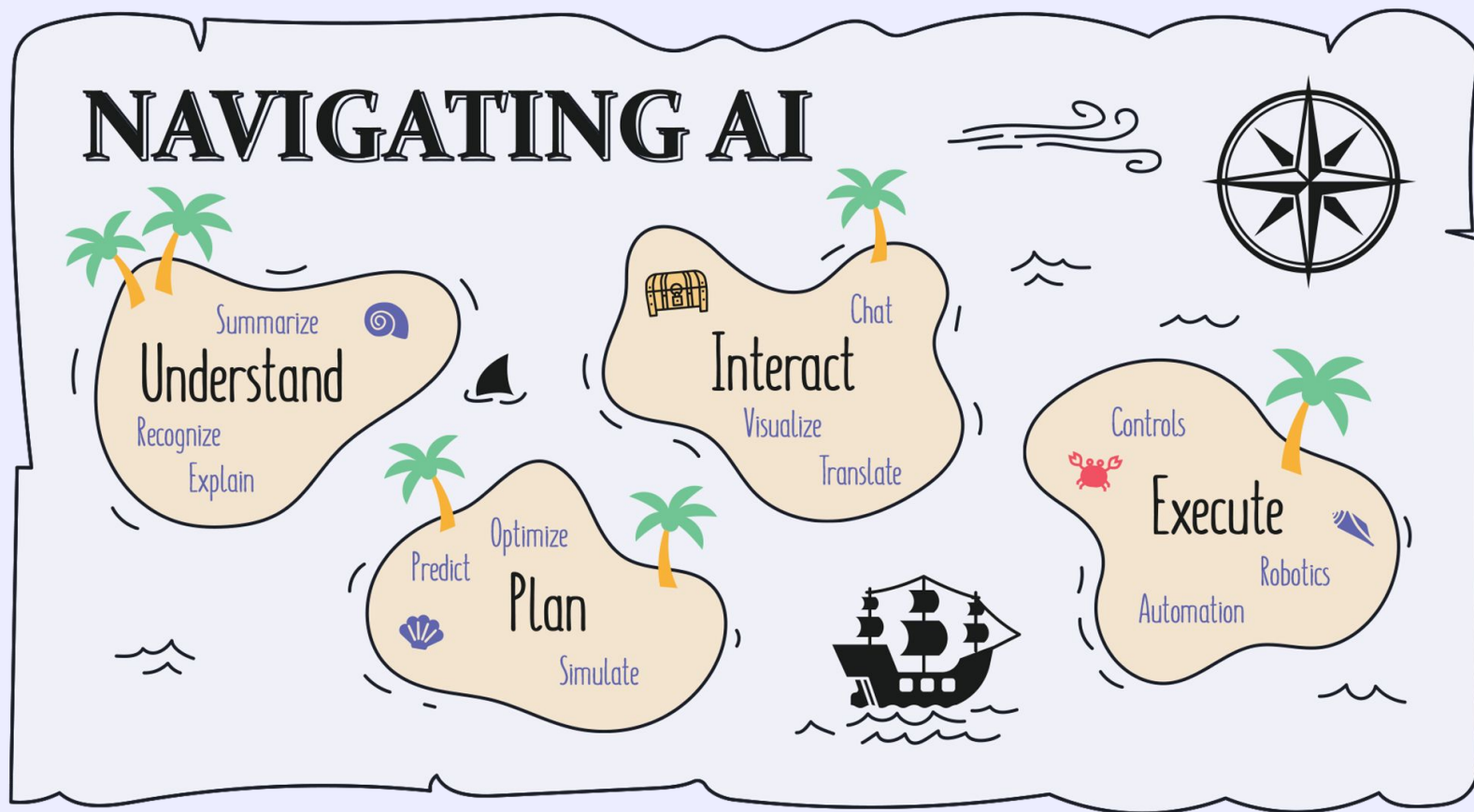
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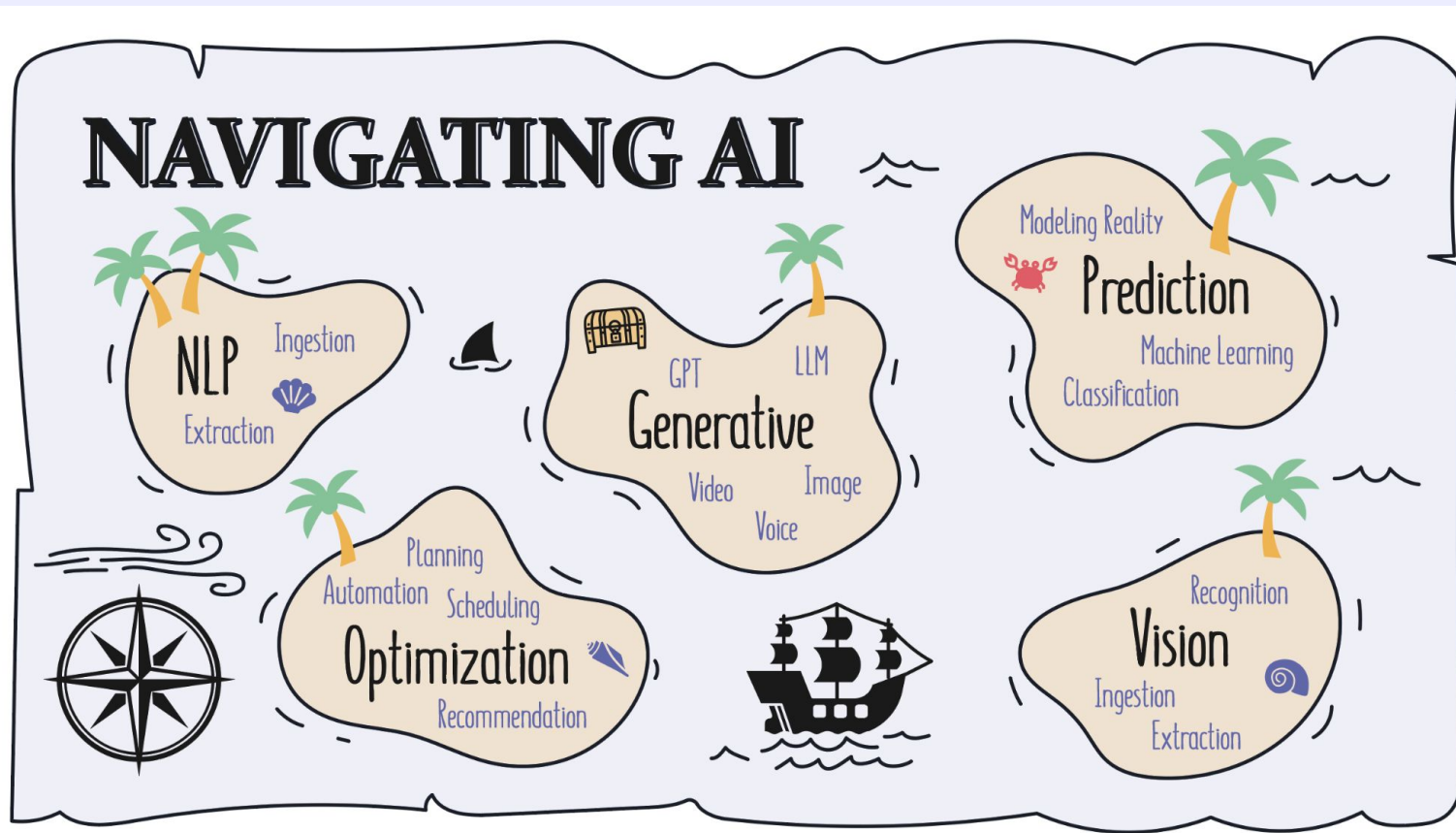
AI Isn't a Monolith



AI Isn't a Monolith



AI Isn't a Monolith



Productivity

**AI
in the Product**

**AI
is the Product**

Governance

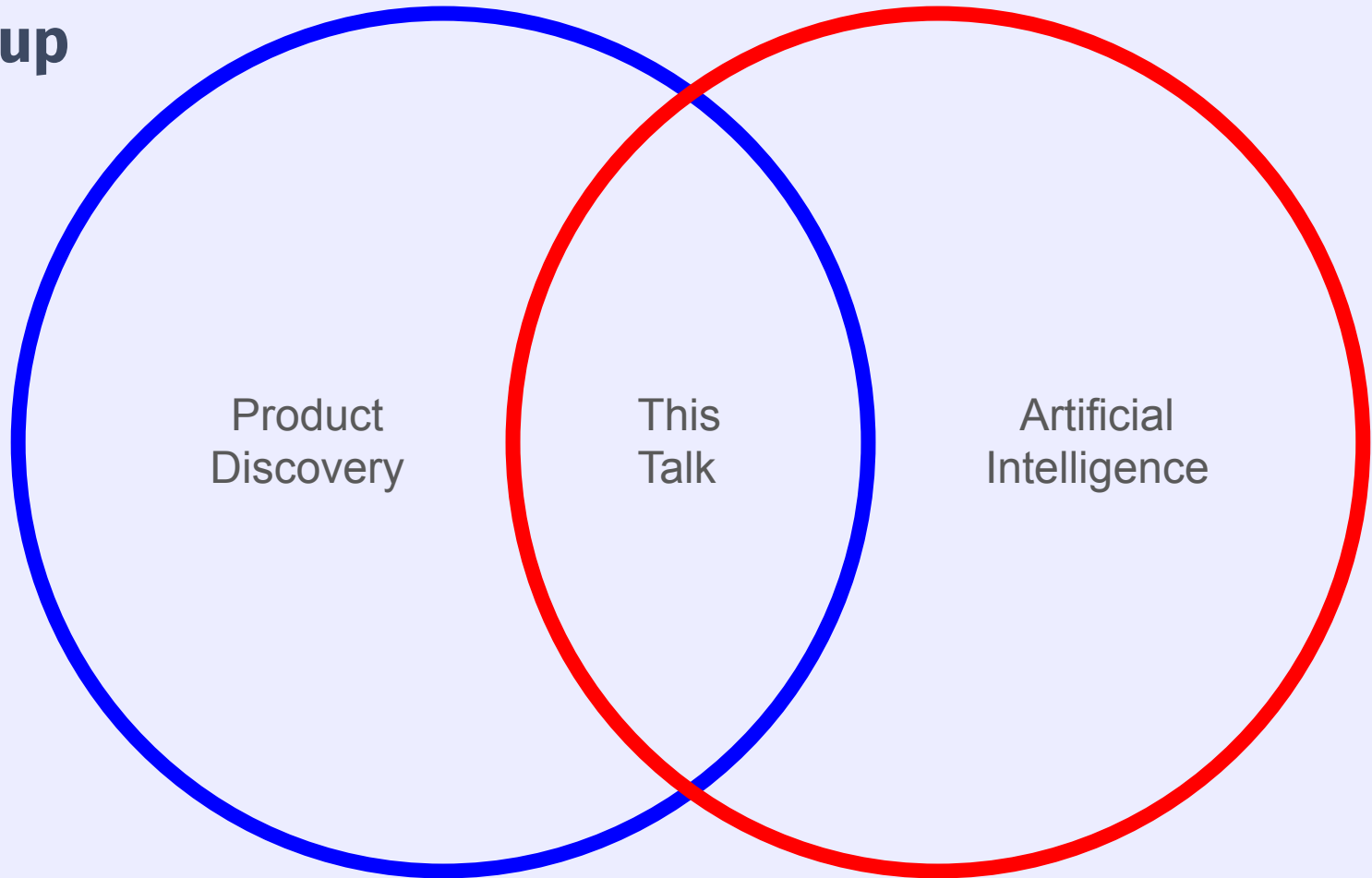
Data Architecture

Productivity

AI
in the Product

AI
is the Product

The Setup



Productivity

Using AI to make discovery tasks less expensive and more effective

AI
in the Product

Using Discovery Exercises to Identify Opportunities to Use AI in Products

AI
is the Product

Using Feasibility Studies to Ensure Our Products **CAN** be Built

Productivity

Using AI to make discovery tasks less expensive and more effective

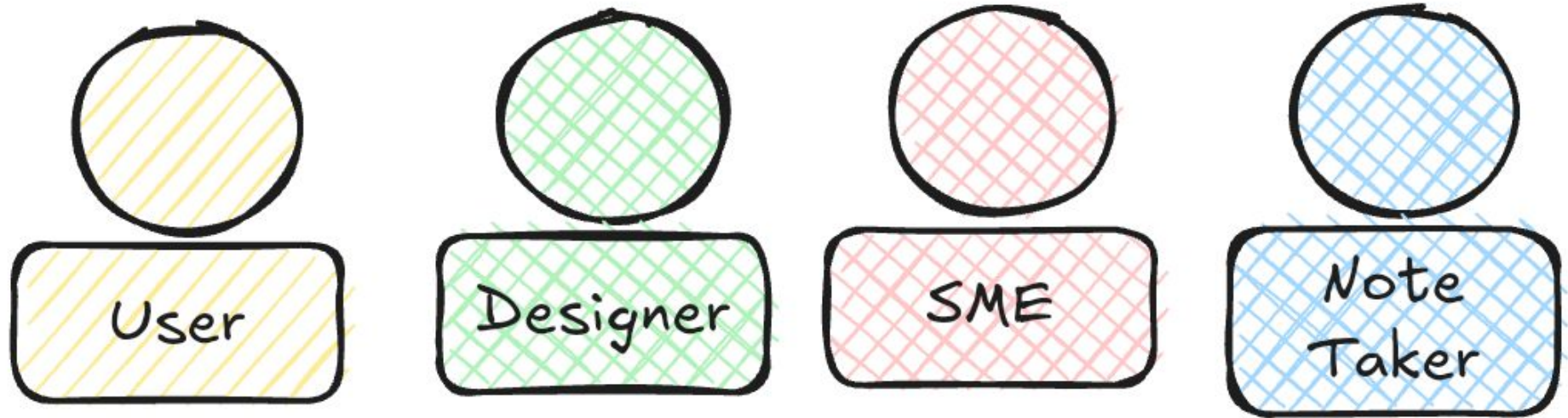
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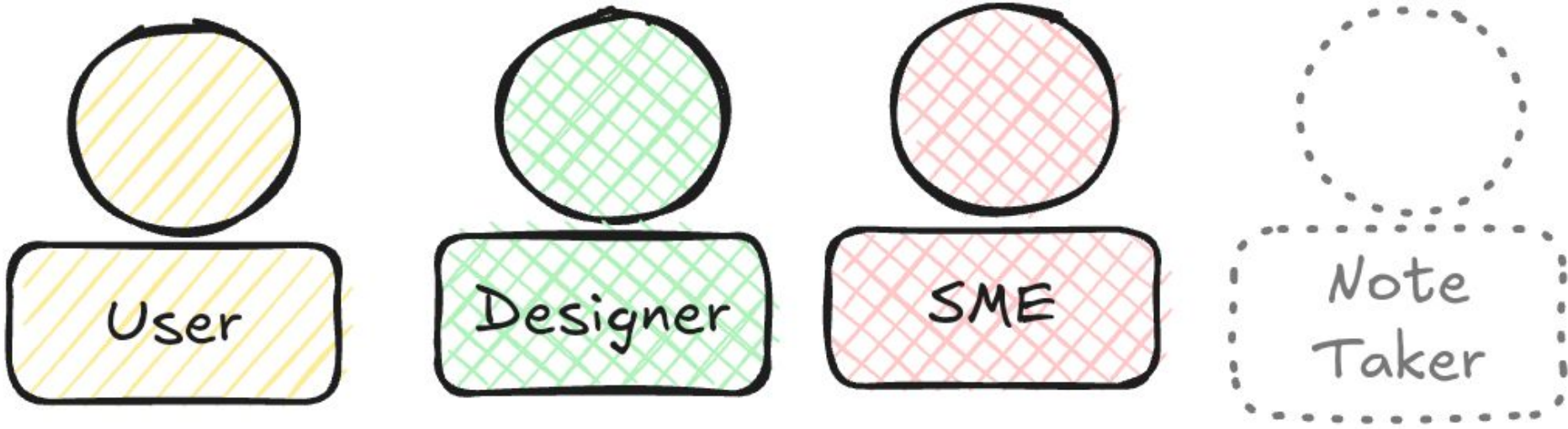
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User Studies: Taking Dictation & Transcripts



Taking Dictation & Transcripts



Sentiment Analysis



Gaze Tracking & Scanning

- Explain Scading
- Explain Gaze Tracking Technology
- Show how we can reduce cognitive load by d scading

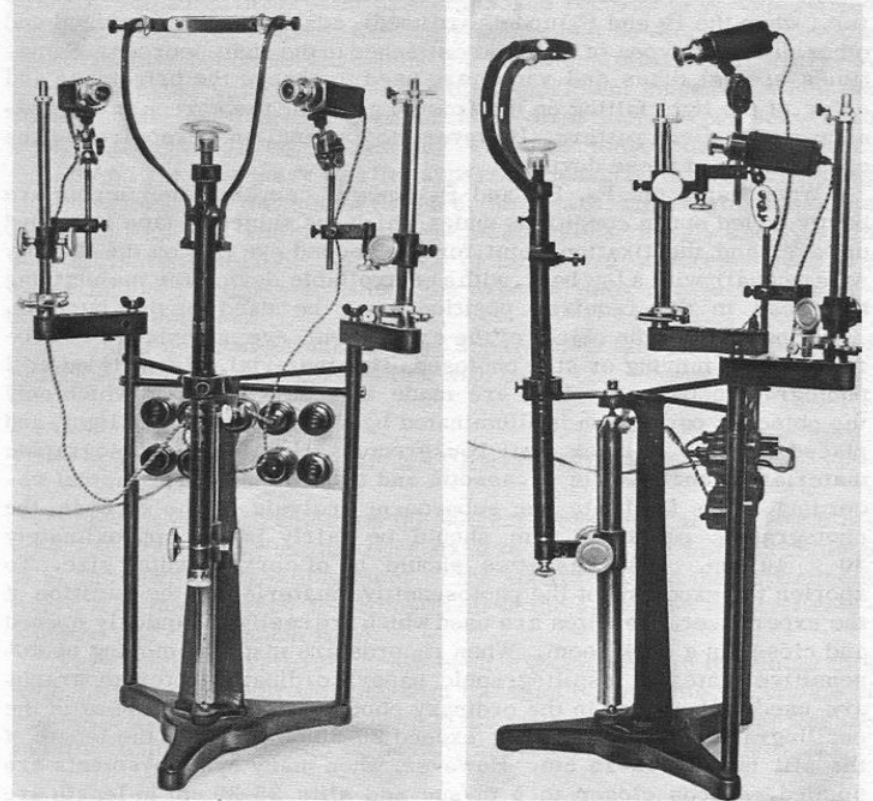


Fig. 21. The apparatus used in recording eye movements.

Ideation & Filling in Templates

STUCK BETWEEN STRATEGY & EXECUTION...

Can AI Help?



In order to follow along in
today's workshop, you will
need access to one of these:

- Claude.ai
- ChatGPT

(the free versions are mostly fine for today)

Chris Shinkle Director of Innovation | SEP | [linkedin.com/in/chrisshinkle](https://www.linkedin.com/in/chrisshinkle)

Ideation & Filling in Templates

Where AI CAN'T Help.

- **Complex Evaluation**

- AI can surface patterns but can't evaluate strategic fit

- **Organization Context**

- Can't understand unwritten rules and relationships

This is NOT a replacement for humans or human judgement. This supplements what you're already doing, it doesn't replace it.

- **Strategic Alignment**

- AI can't assess cultural and political fit
- Unable to build genuine consensus or navigate competing priorities

- Limited ability to balance competing objectives

Ideation & Filling in Templates

PART 1

1. Prime the AI
 - a. You are an expert problem solver and top strategy consultant. I'd like to give you a business objective and you help me consider 5-10 opportunities. Include multiple "how might we" statements to reach the objective for each opportunity.
2. Industry and Target Outcome
 - a. **Basic prompt**
 - i. *We are a local credit union and would like to improve our products and services by leveraging technology. Our goal is to add five thousand active checking accounts over the next five years.*
 - b. (Alternate) with added context:
 - i. General information on the situation.
 - ii. Background information on the business.
 - iii. The challenge we are facing.
 - iv. What we have tried so far to overcome the challenge.
 - v. The results of our attempts so far.

Productivity

Using AI to make discovery tasks less expensive and more effective

What Does AI Do for Discovery?

Productivity

Using AI to make discovery tasks less expensive and more effective

- Enable Scale
- Reduce Overhead Cost (Enabling More Active Participation!)
- Converts some Qualitative Assessments to Quantitative

Productivity

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AI
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AI
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Using Feasibility Studies to Ensure Our Products **CAN** be Built

NAVIGATING AI



Summarize
Understand
Recognize
Explain



Chat
Interact
Visualize
Translate

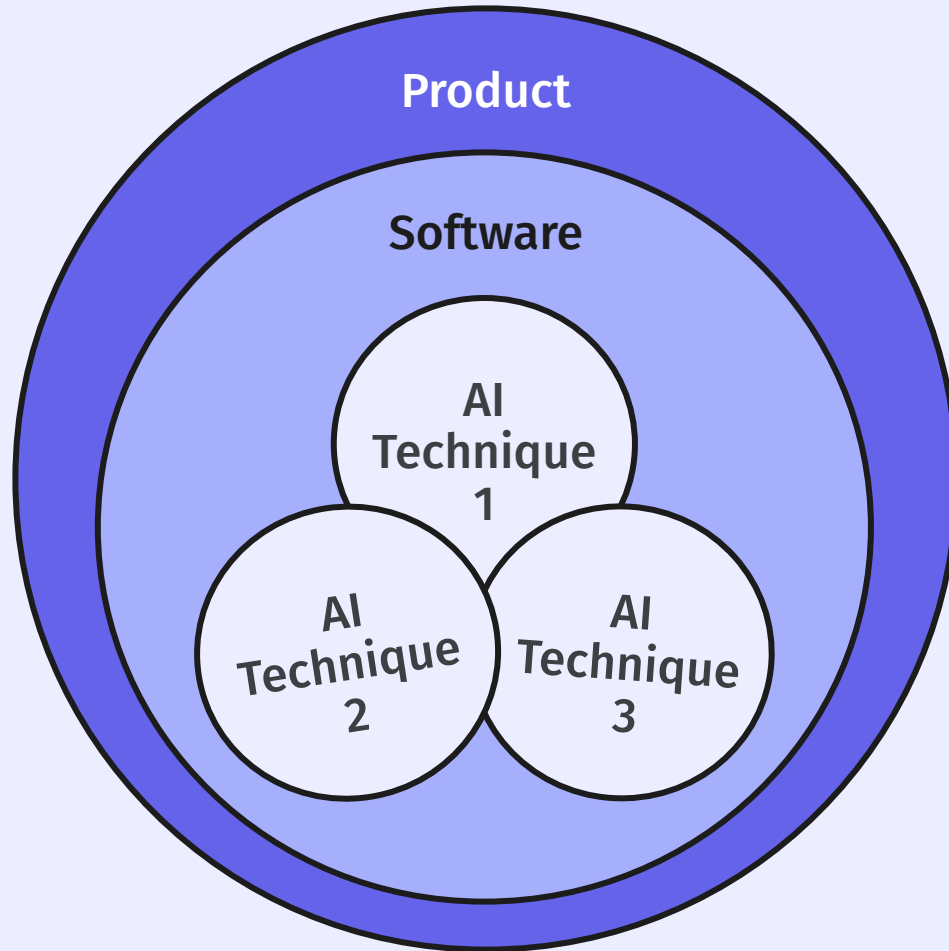


Predict
Optimize
Plan
Simulate



Controls
Execute
Robotics
Automation





Our Example: Food Delivery Service for Fries



Potato Persona

Sarah Chen

Customer



Pain Points:

- Struggles with dietary preference discovery
- Frustrated by inconsistent delivery times

Goals:

- Save time on meal planning
- Discover restaurants matching preferences

Marcus Rodriguez

Restaurant Owner



Pain Points:

- Difficulty predicting demand
- Challenge maintaining food quality

Goals:

- Optimize kitchen operations
- Increase online visibility

Alex Thompson

Delivery Driver



Pain Points:

- Complex multi-order routing
- Finding parking in busy areas

Goals:

- Maximize delivery efficiency
- Maintain food quality during transit

Jobs to be Done & Service Mapping

- Explain these two discovery tools directly
- Point out exactly what they're meant to produce
- Work an example
- Show how the artifacts answer the original questions

Jobs To Be Done

Jobs To Be Done Flow



Jobs To Be Done Flow



Jobs to Be Done

Food Delivery JTBD Canvas

Consider all stakeholders!

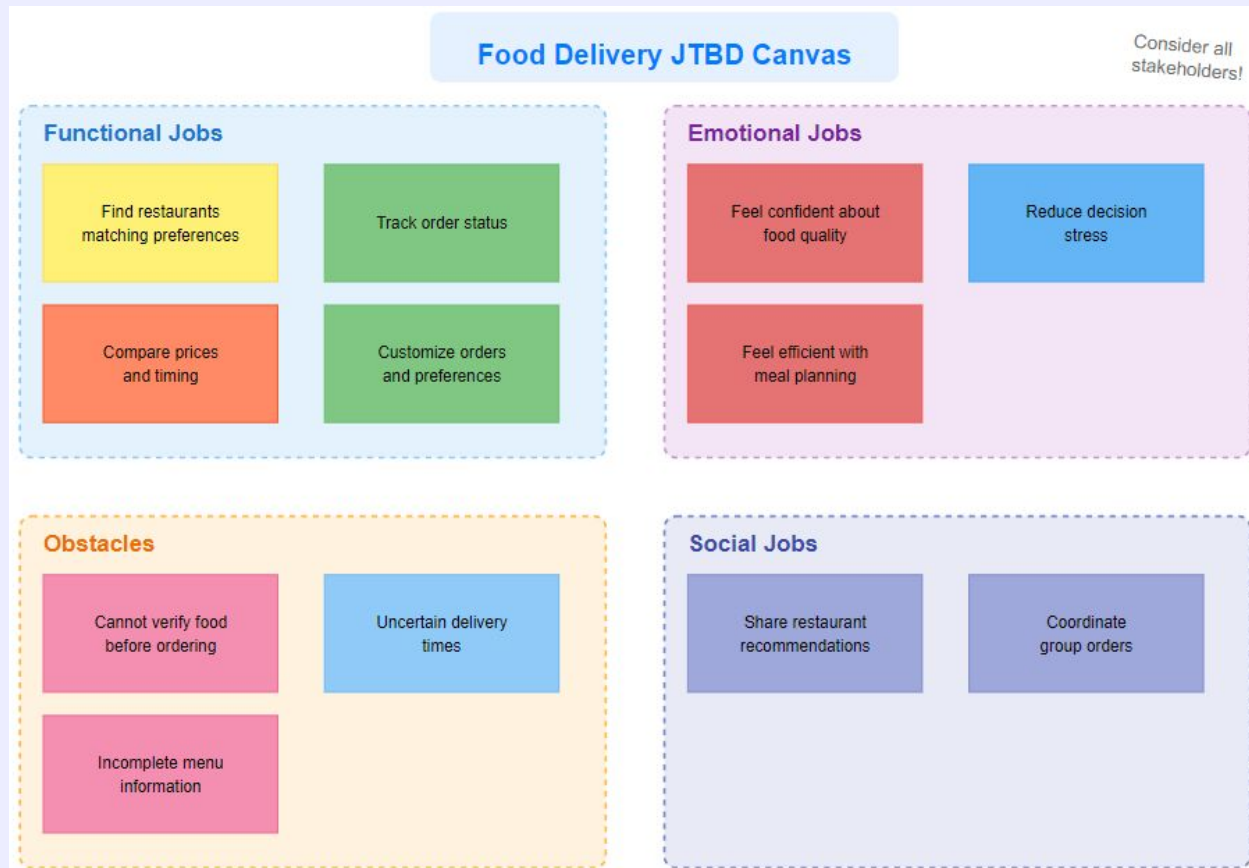
Functional Jobs

Emotional Jobs

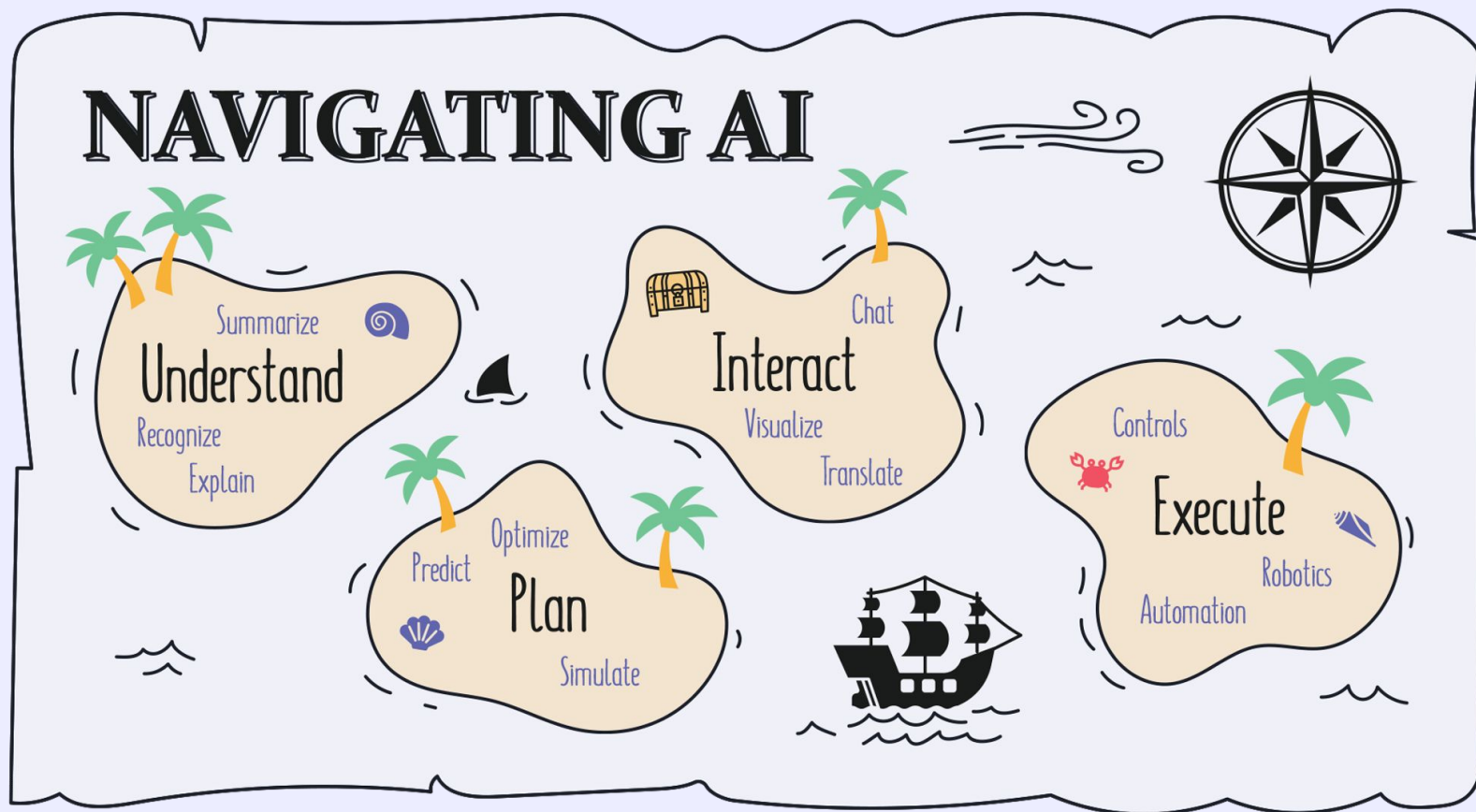
Obstacles

Social Jobs

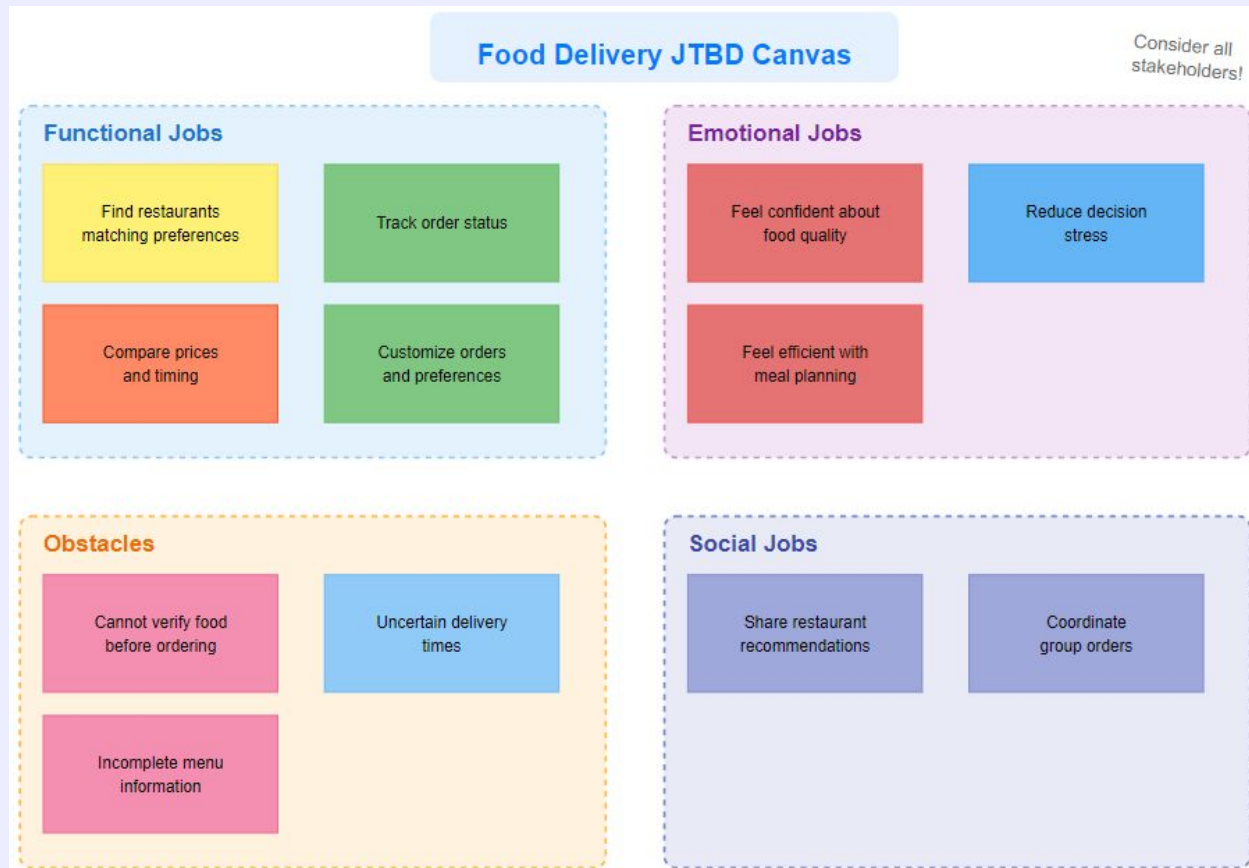
Jobs to Be Done



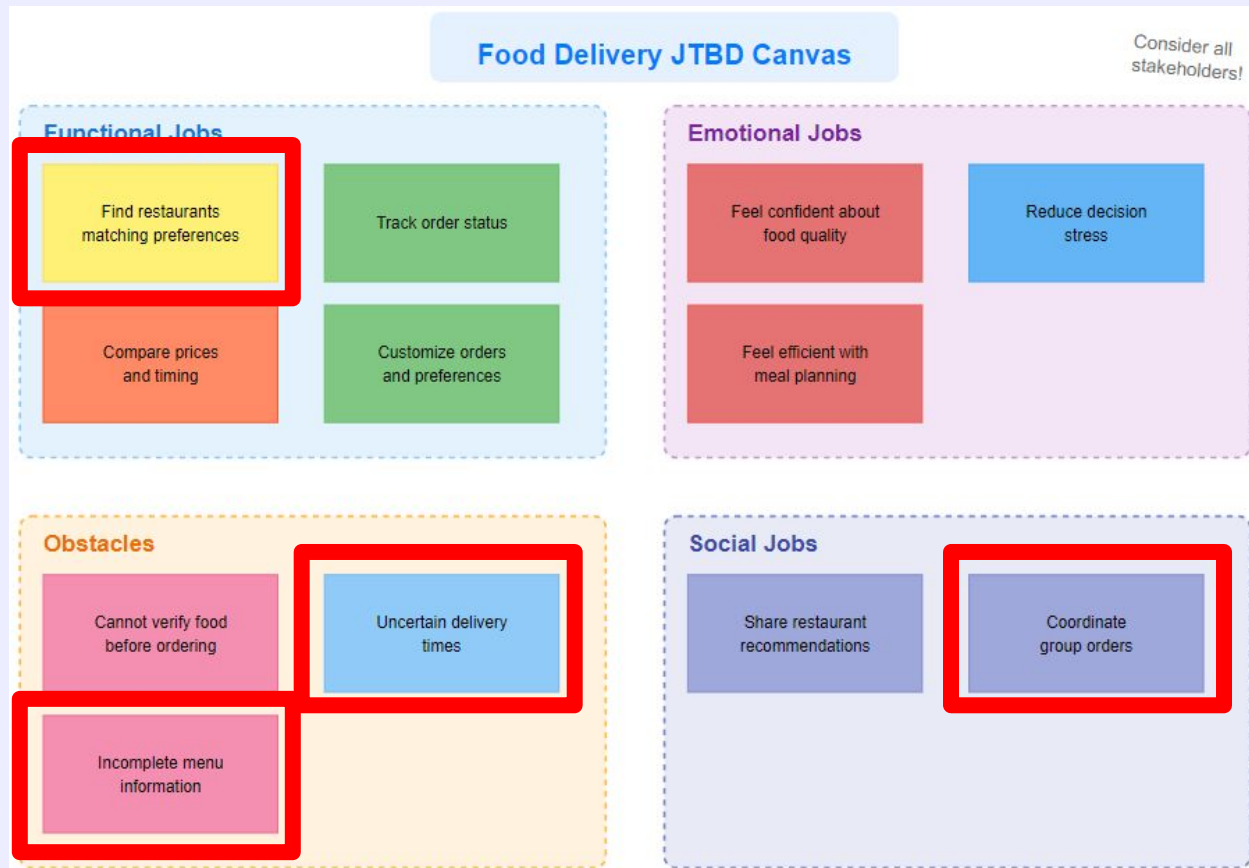
AI Isn't a Monolith



Jobs to Be Done



Jobs to Be Done



Service Mapping from 10,000 Feet

Start with user journeys and business capabilities. Map the critical paths that deliver value to customers.

Document service dependencies:

- Identify upstream/downstream services
- Note synchronous vs asynchronous interactions
- Capture data flows and payloads
- Record SLAs and performance requirements

Visualize the mappings:

- Use architecture diagrams showing service relationships
- Include infrastructure components
- Highlight potential failure points and bottlenecks

Iterate and refine:

- Review with stakeholders
- Update as architecture evolves
- Use mapping to guide decisions about resilience, scaling, and monitoring

What is Service Mapping?



Service Mapping

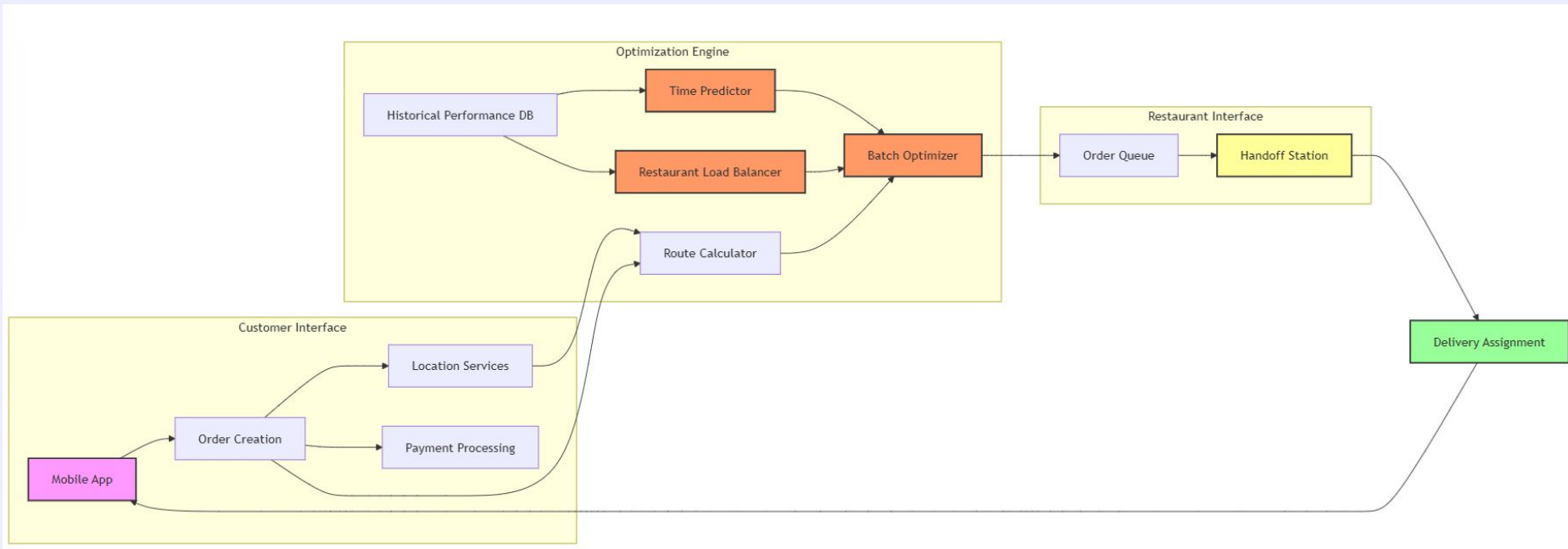
Capture User
Journeys

Document
Service
Dependencies

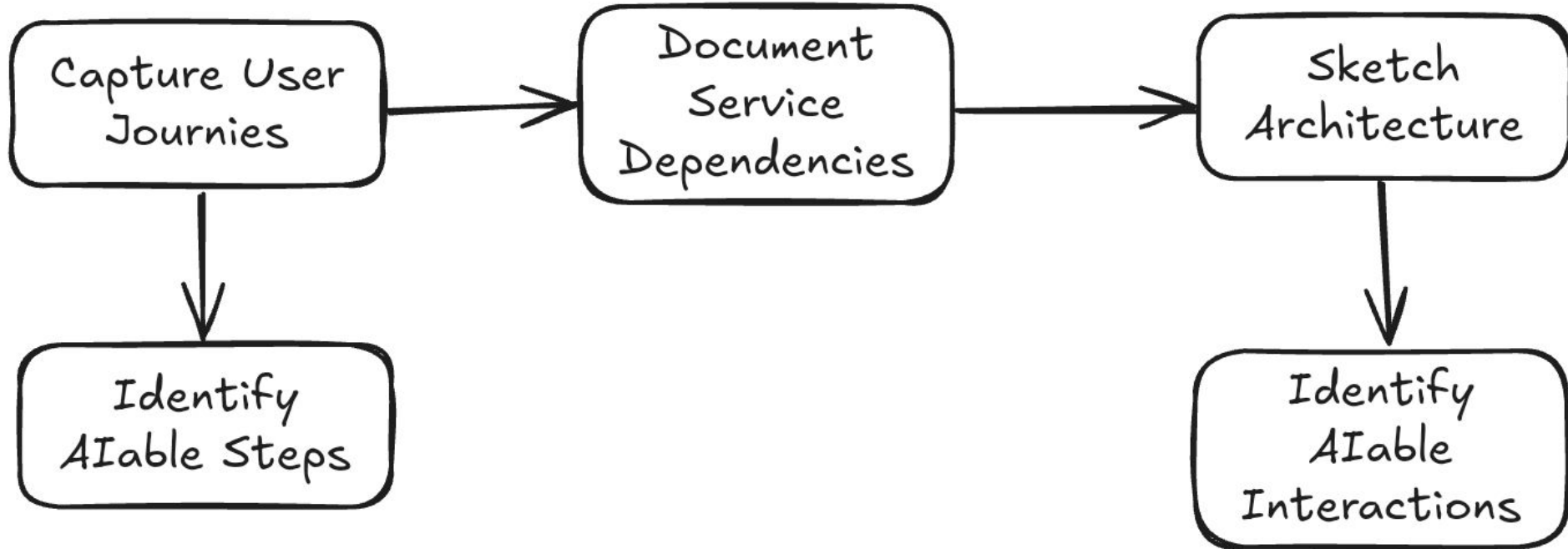
Sketch
Architecture



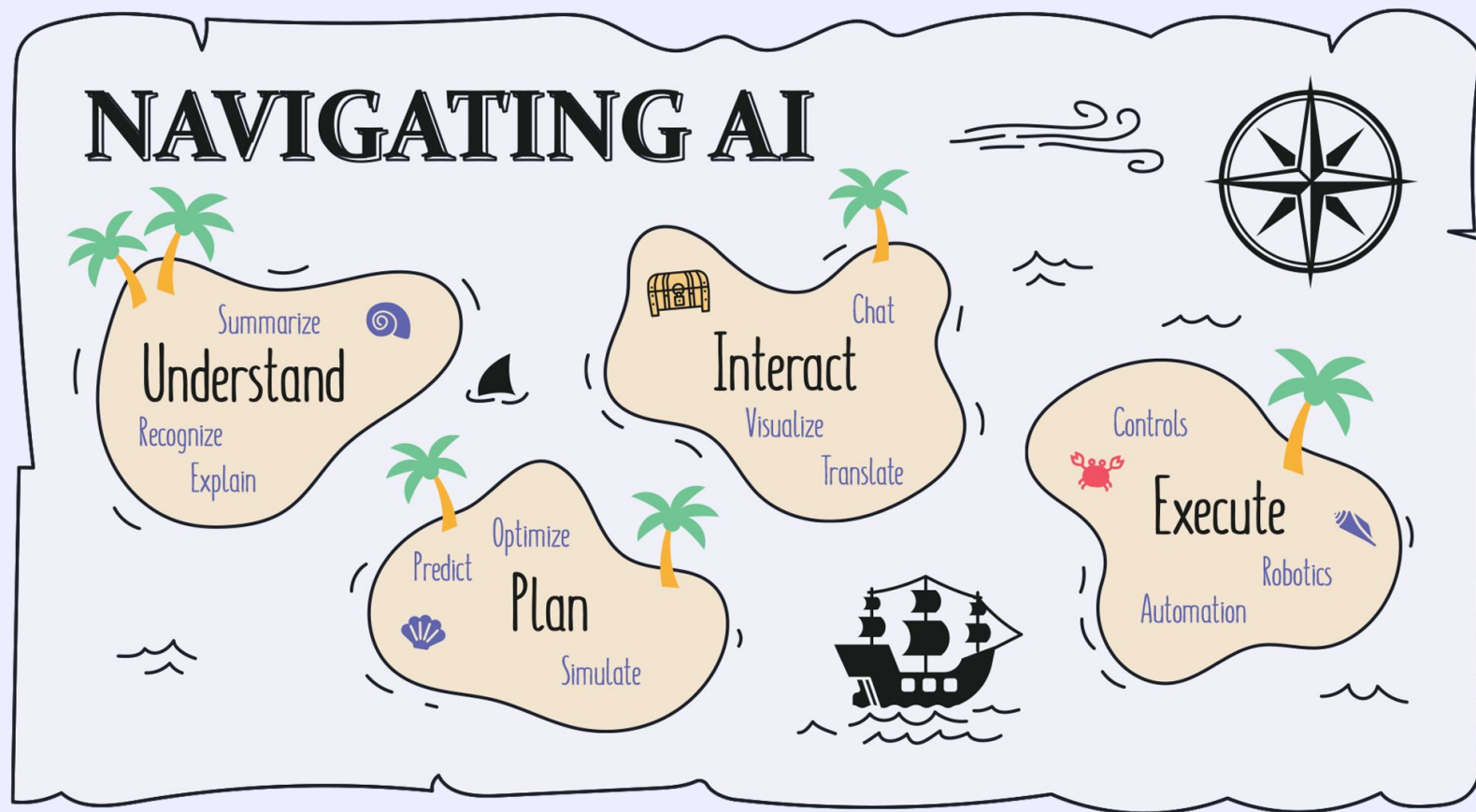
Service Mapping



Service Mapping for AI



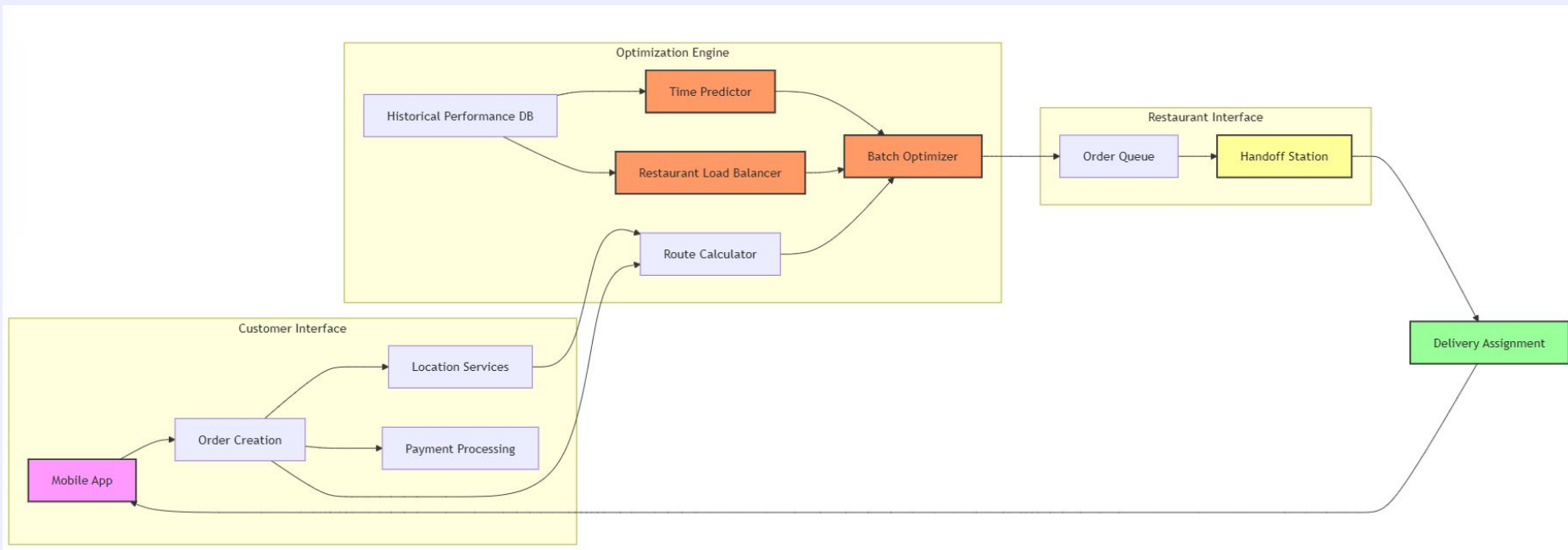
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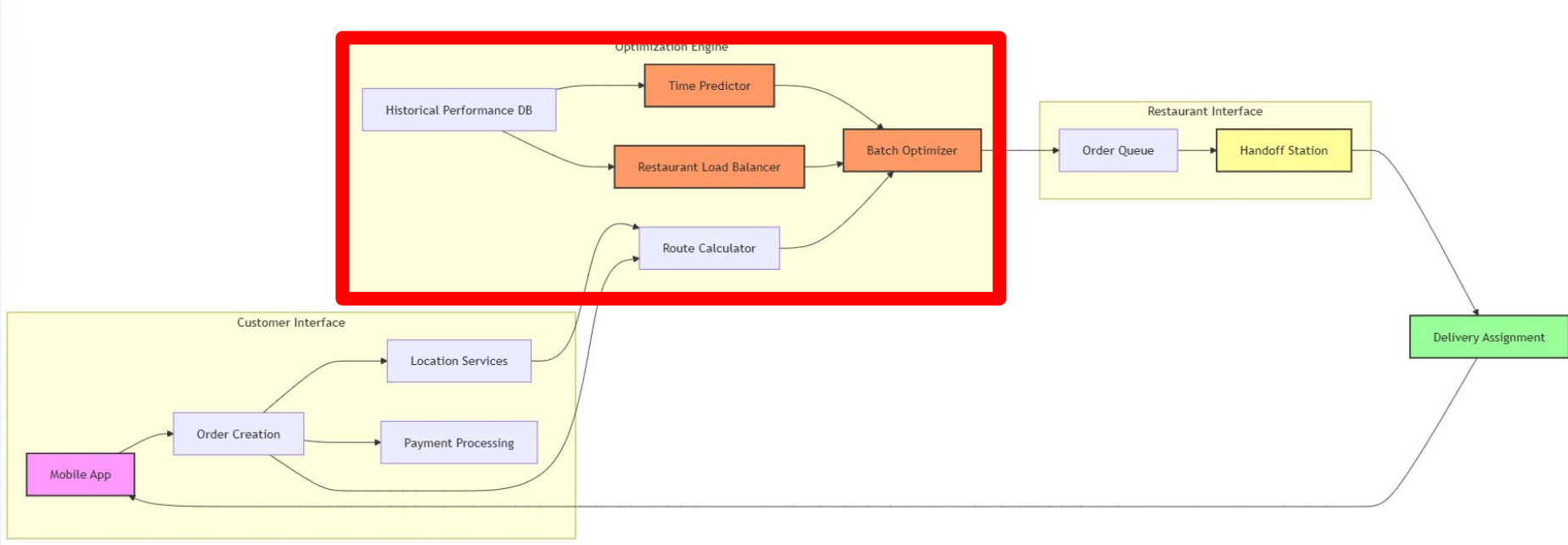
Tying the Two Together

- Using the worked example from the previous slide...
- Show how the taxonomy of AI approaches leans into jobs to be done
- Here are some keywords in jobs to be done that show up on our verb island map
- Here are some known AI approaches that align well with the problems being described here and here

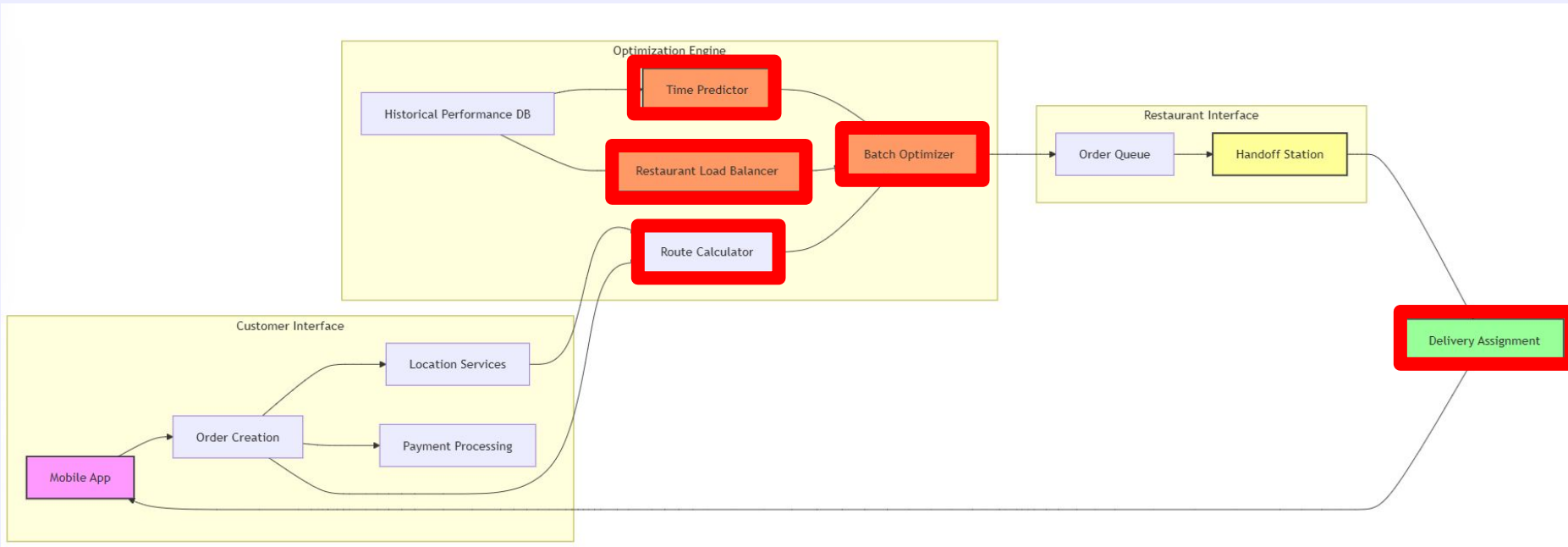
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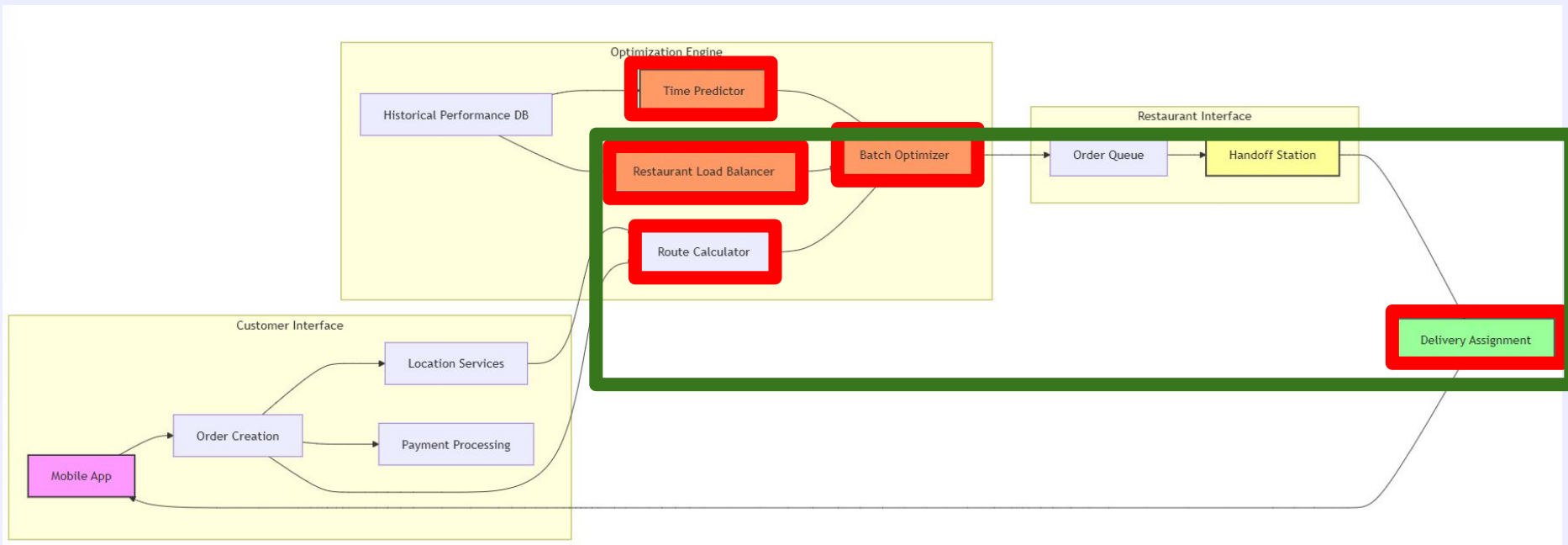
Service Mapping



Service Mapping

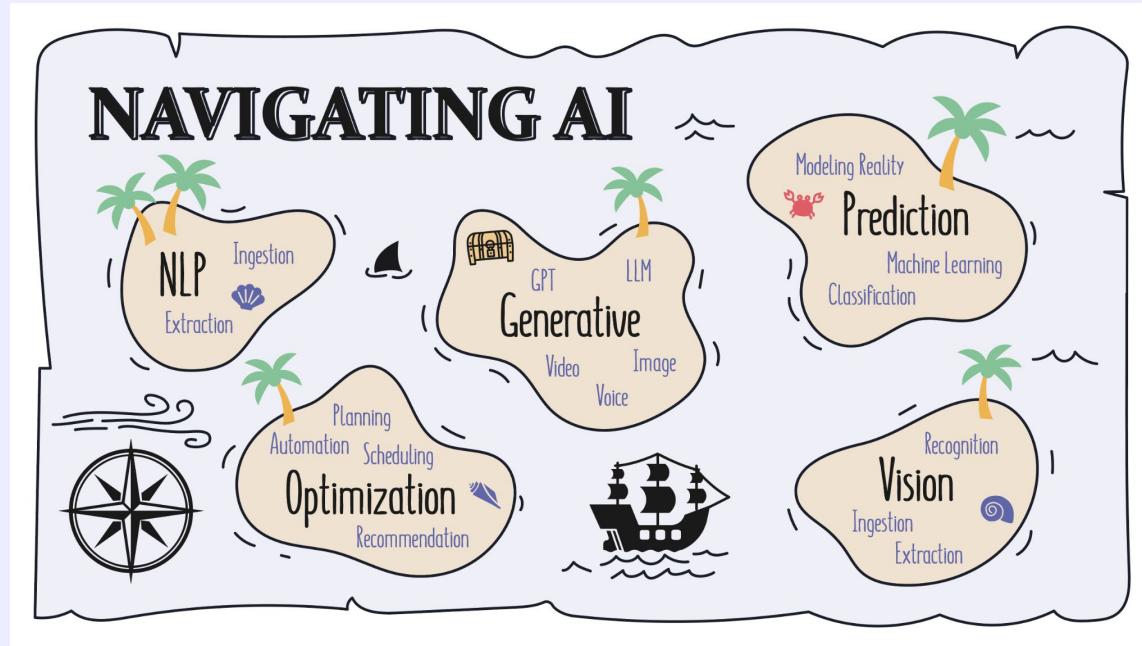


Service Mapping



AI in the Product

Using Discovery Exercises to Identify Opportunities to Use AI in Products



Productivity

Using AI to make discovery tasks less expensive and more effective

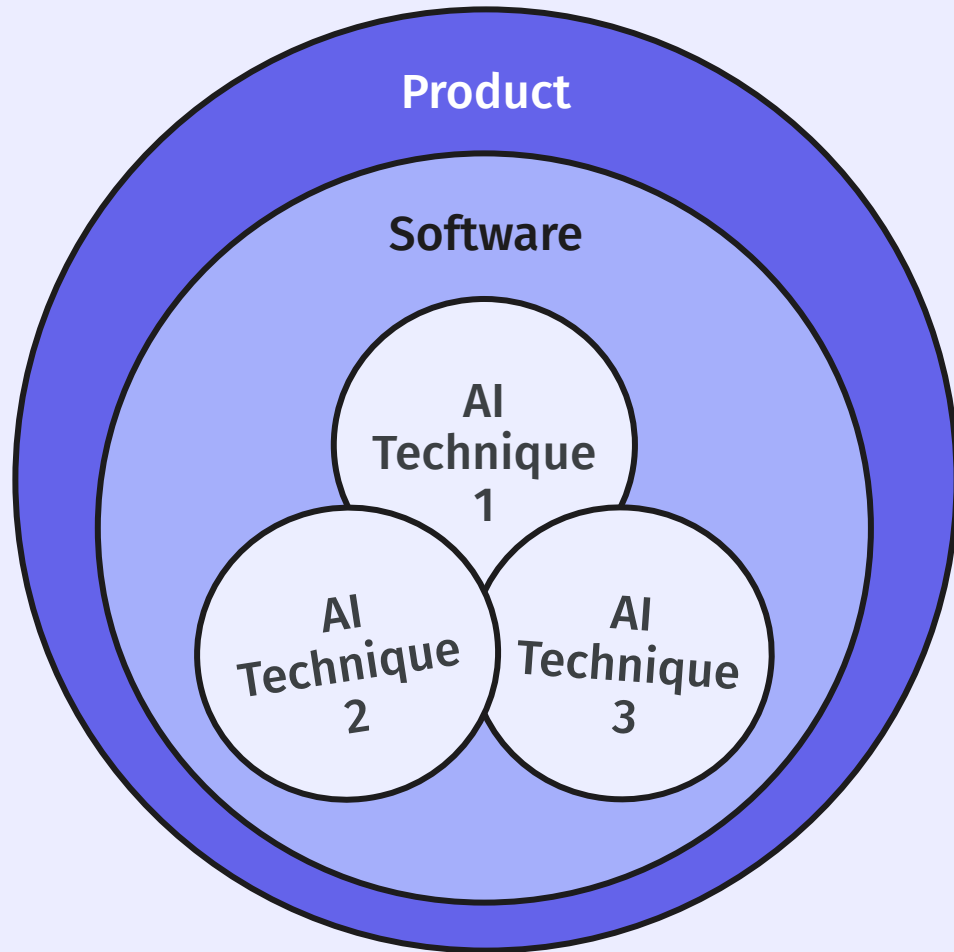
AI
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Using Discovery Exercises to Identify Opportunities to Use AI in Products

AI
is the Product

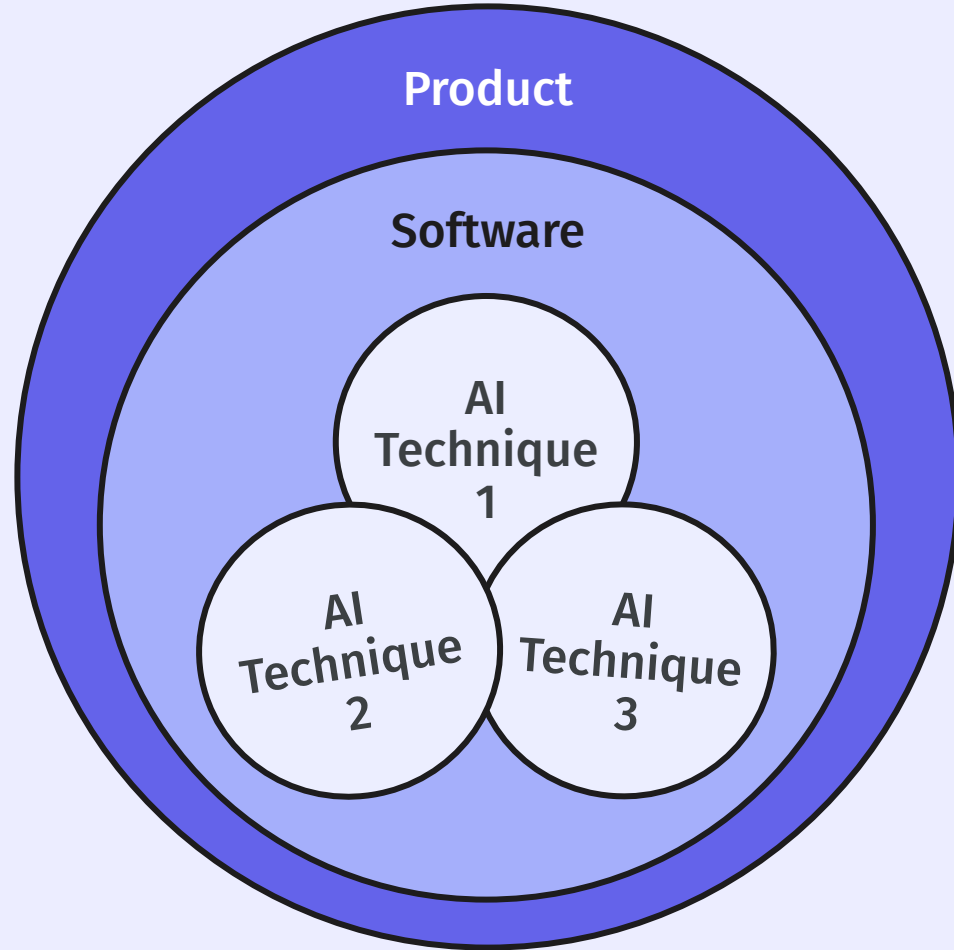
Using Feasibility Studies to Ensure Our Products **CAN** be Built

AI Is Just Software

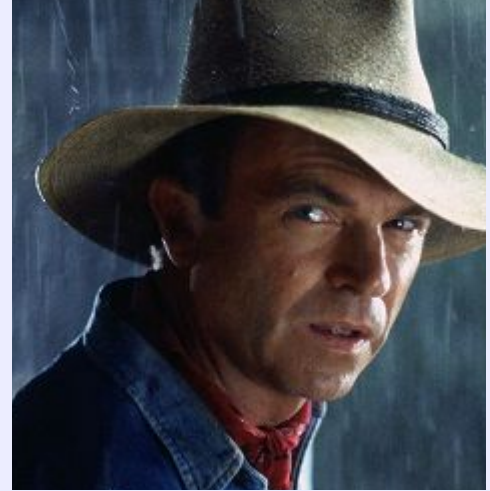


AI Is Just Software but... with a few key differences

- Team composition
- The Iron Triangle Changes
- Challenging to Estimate



Team Composition



Team Composition



AI Expert

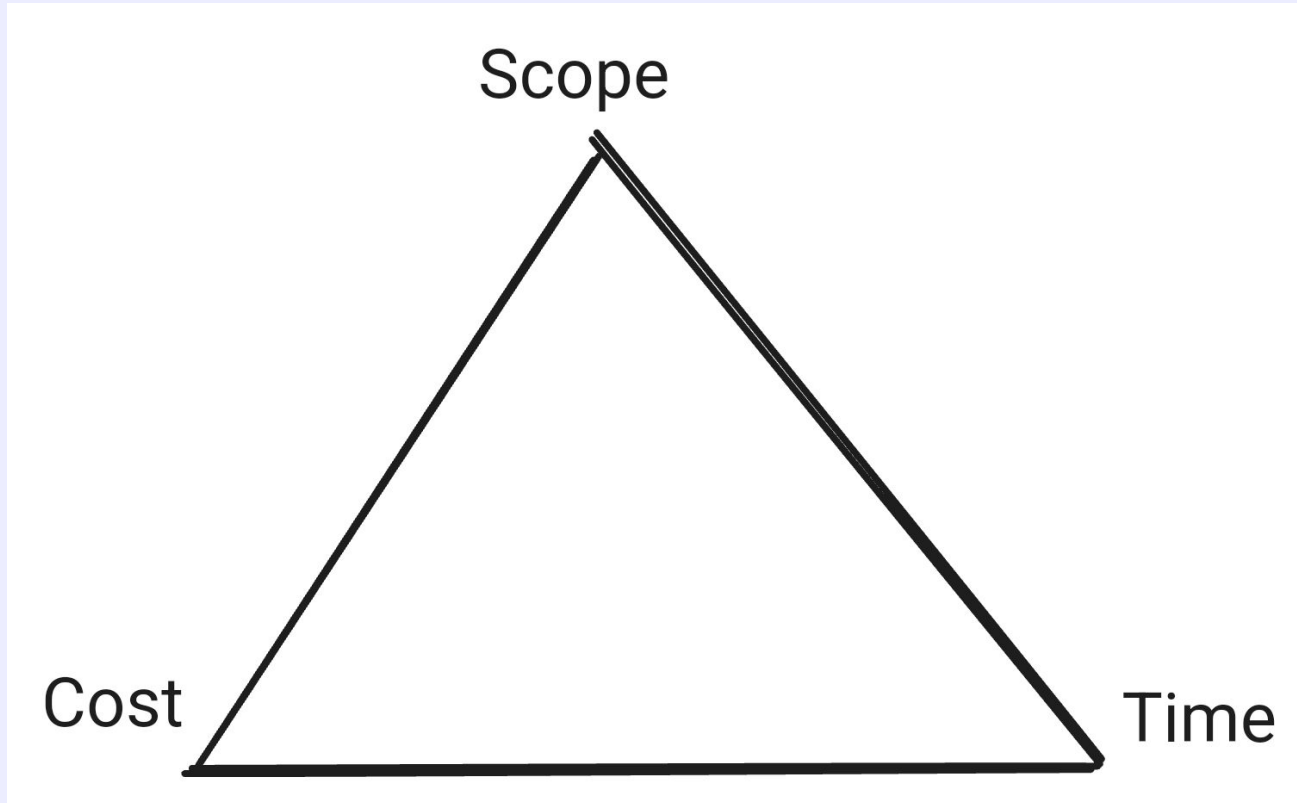


Software Expert

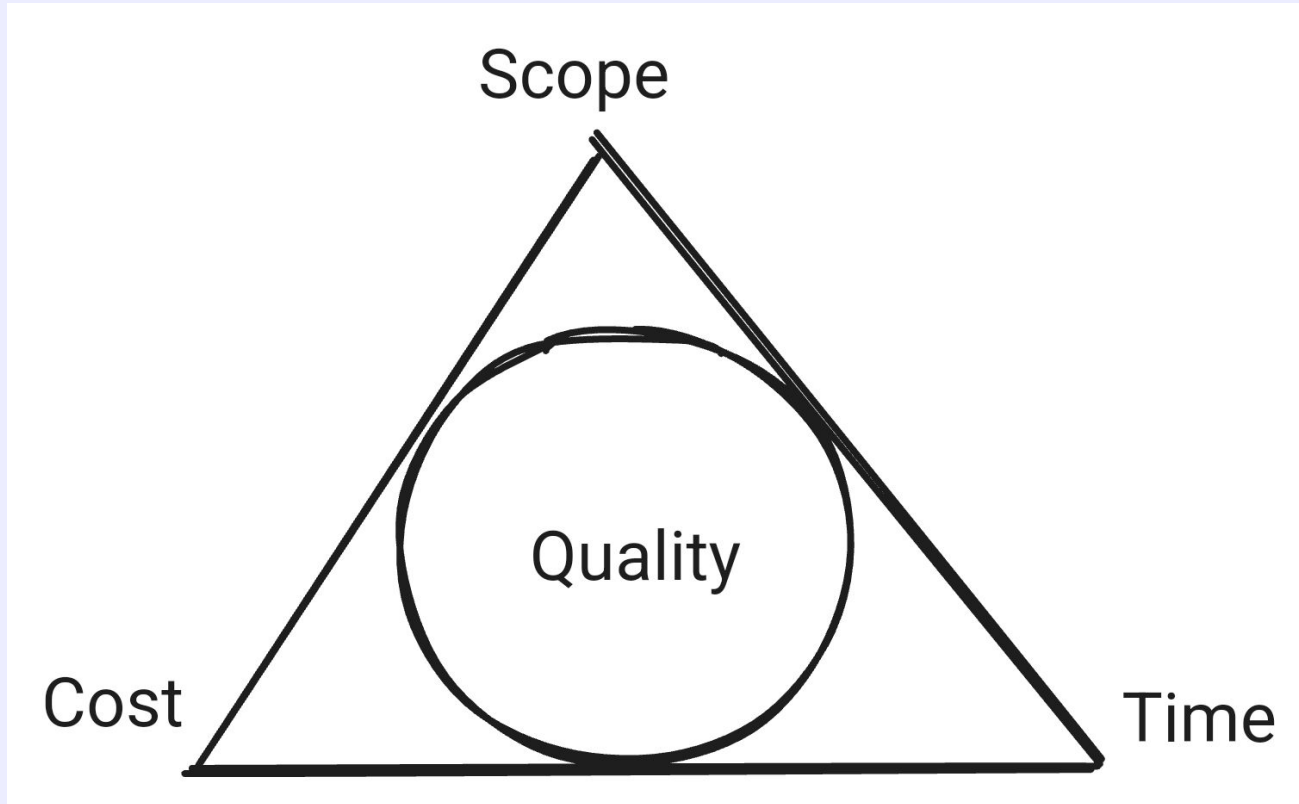


Subject Matter Expert

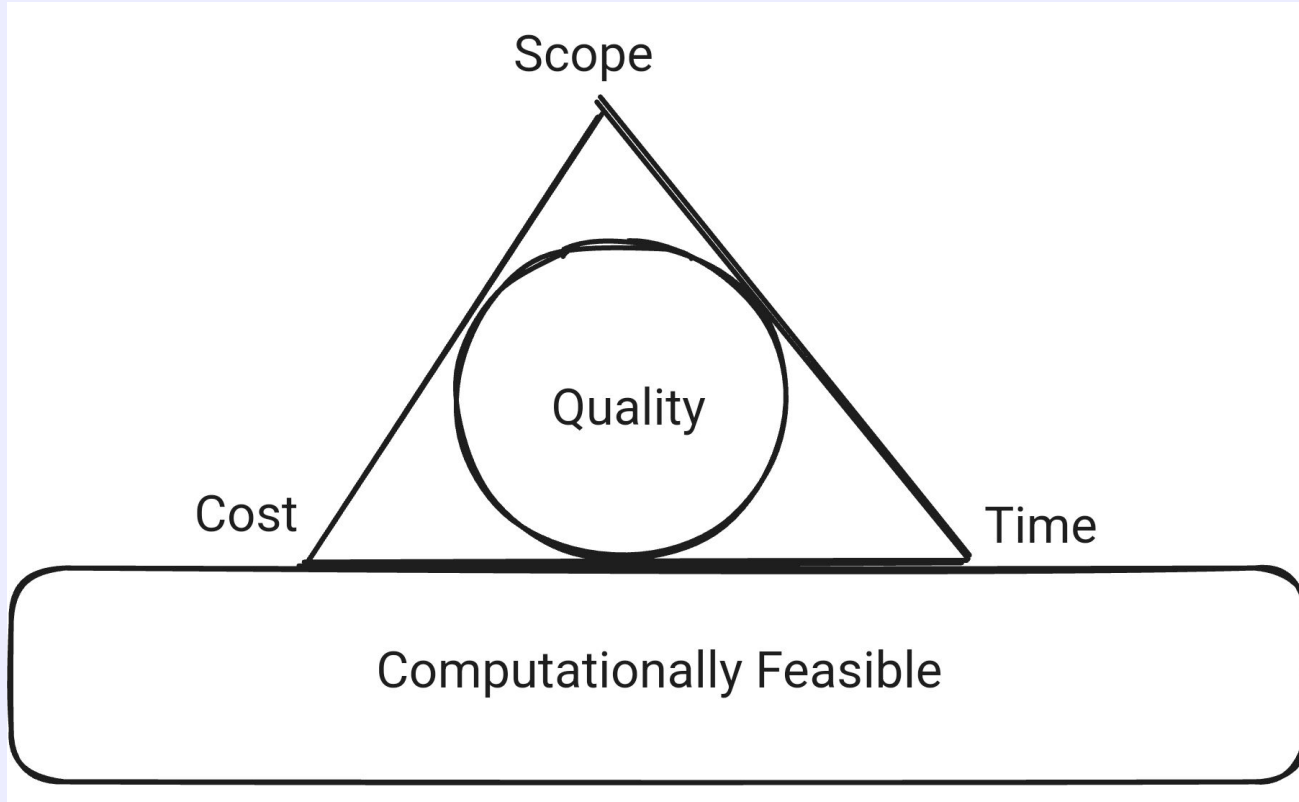
Iron Triangle Challenges



Iron Triangle Challenges



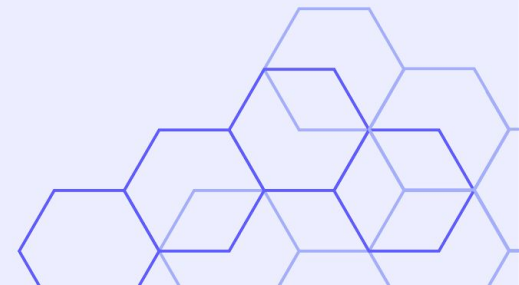
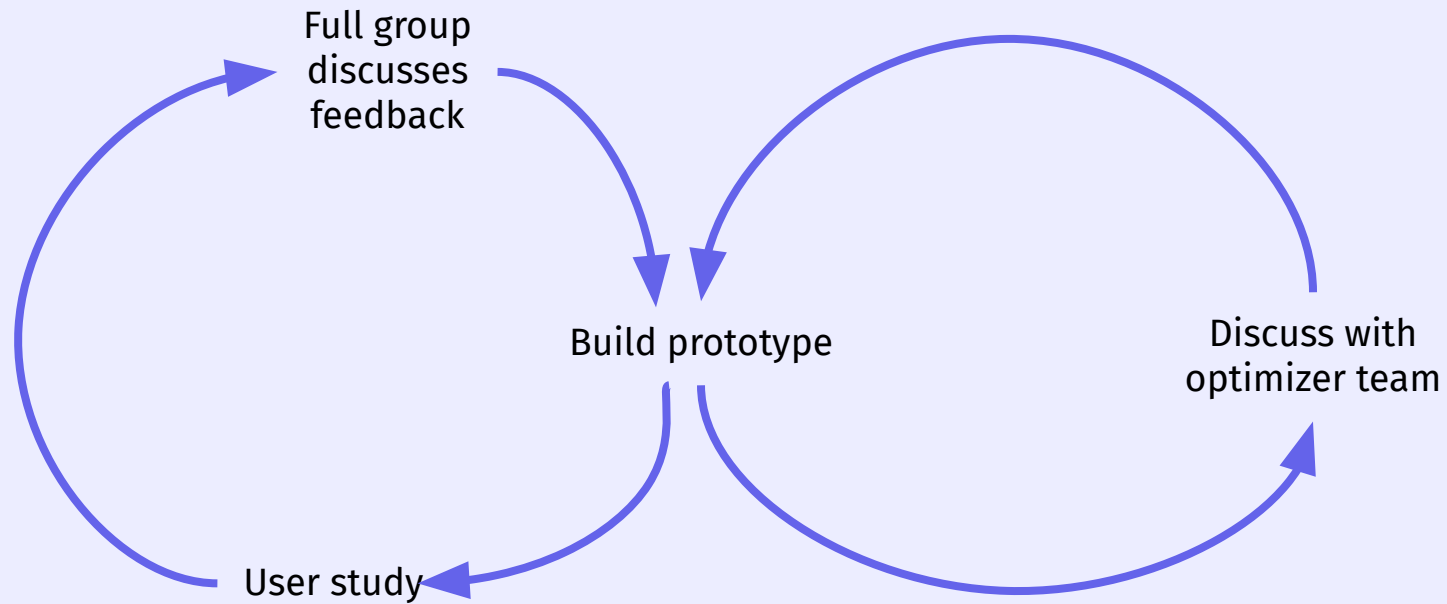
Iron Triangle Challenges



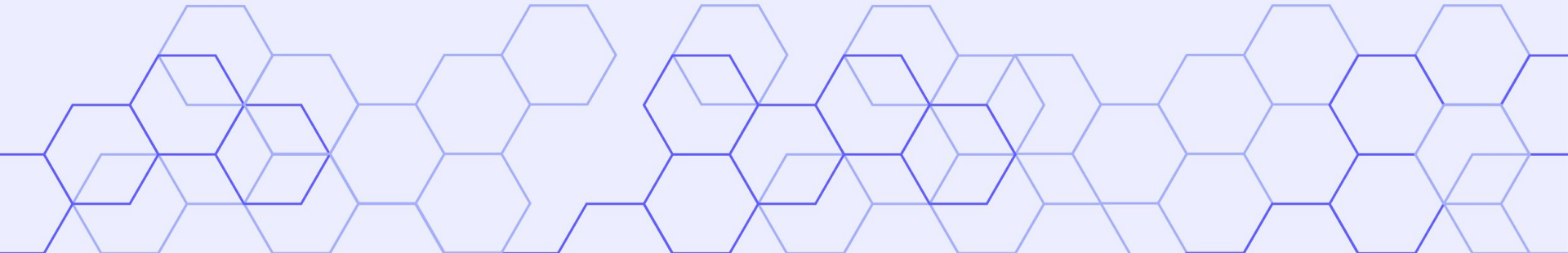
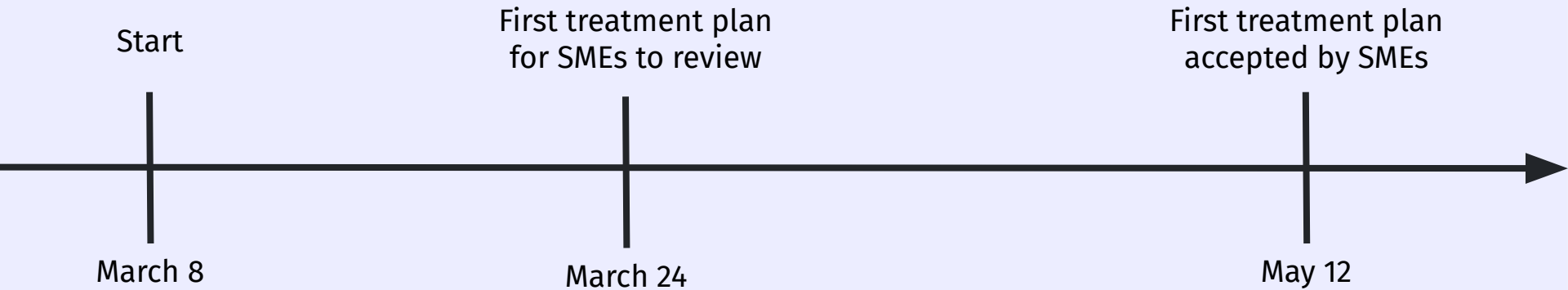
So, How Do We Handle Feasibility?

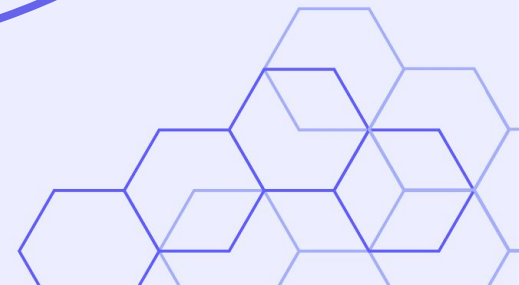
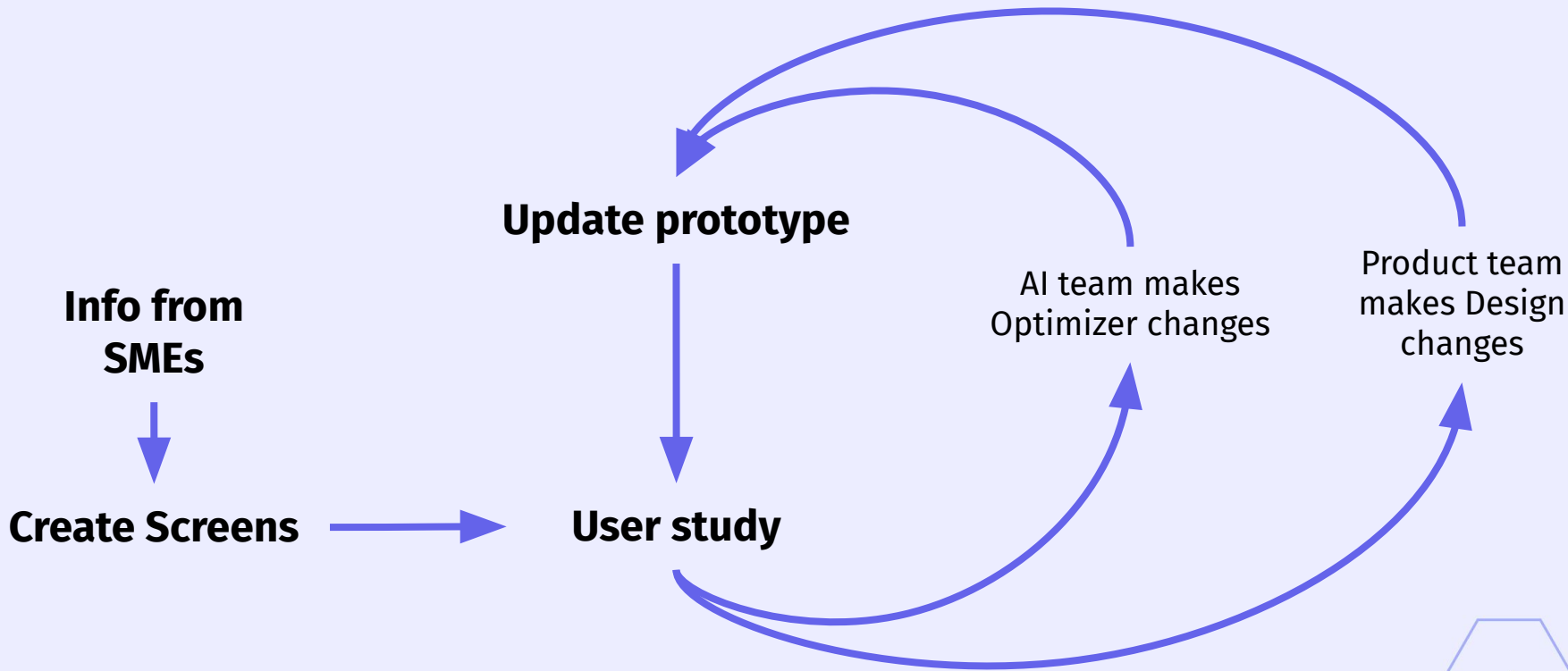
So, How Do We Handle Feasibility?





Feasibility





Road Treatment Plan

Agency

Select an Agency

Yearly Budget

Year 1*

0

Year 2*

0

Year 3*

0

Year 4*

0

Year 5*

0

Year 6*

0

Plan Strategy

Strategy

Please select an option

Select Your Treatments

☐ Select All Standard Fields

☐ Rejuvenate/RPE

☐ Crack Seal

☐ Crack Seal + Rejuv

Rejuv

Crack Seal

Rejuv, Crack Seal

Fog Seal

Your Road Inventory

Search For Roads

Map View: 68 roads

Filter

PASER

Paisley Point
Lime Light Ln - Dead End St
[More](#) 4

Paisley Point
Lime Light Ln - Dead End St
[More](#) 4

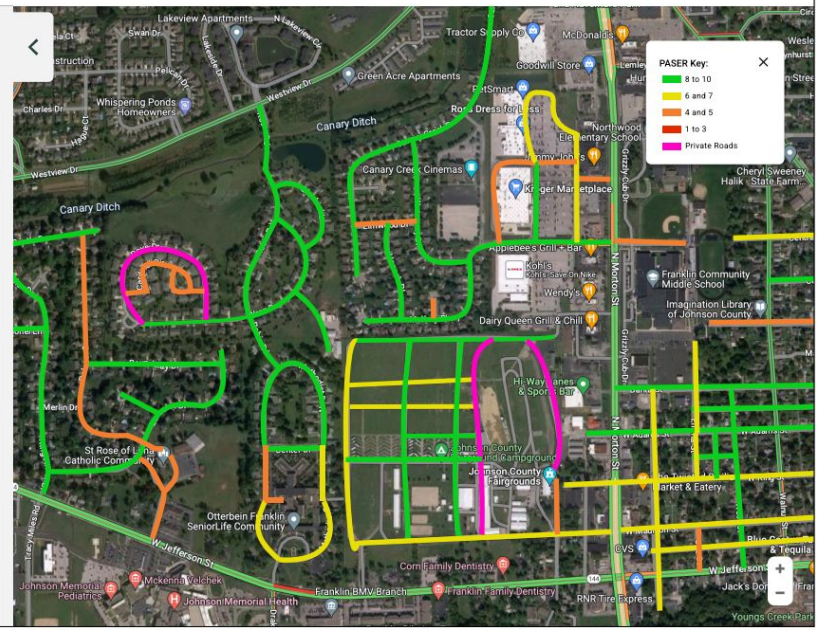
Paisley Point
Lime Light Ln - Dead End St
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[More](#) 4

Paisley Point
Lime Light Ln - Dead End St
[More](#) 4

Paisley Point
Lime Light Ln - Dead End St
[More](#) 4



Road Treatment Plan

Plan Name

[Clear Form](#)

Assets Excel File

Select

No File Chosen

Treatments Excel File

Select

No File Chosen

Budget

Year 1

Year 2

Year 3

Year 4

Year 5

Year 6

Year 7

Year 8

Year 9

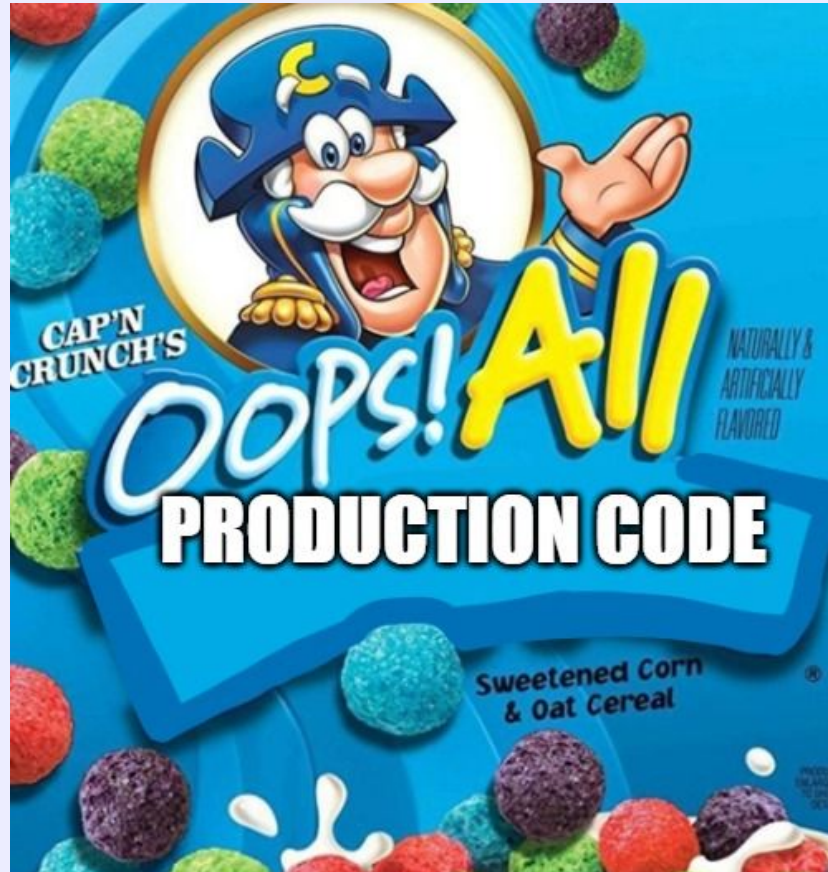
Year 10

Run Time (in Minutes)

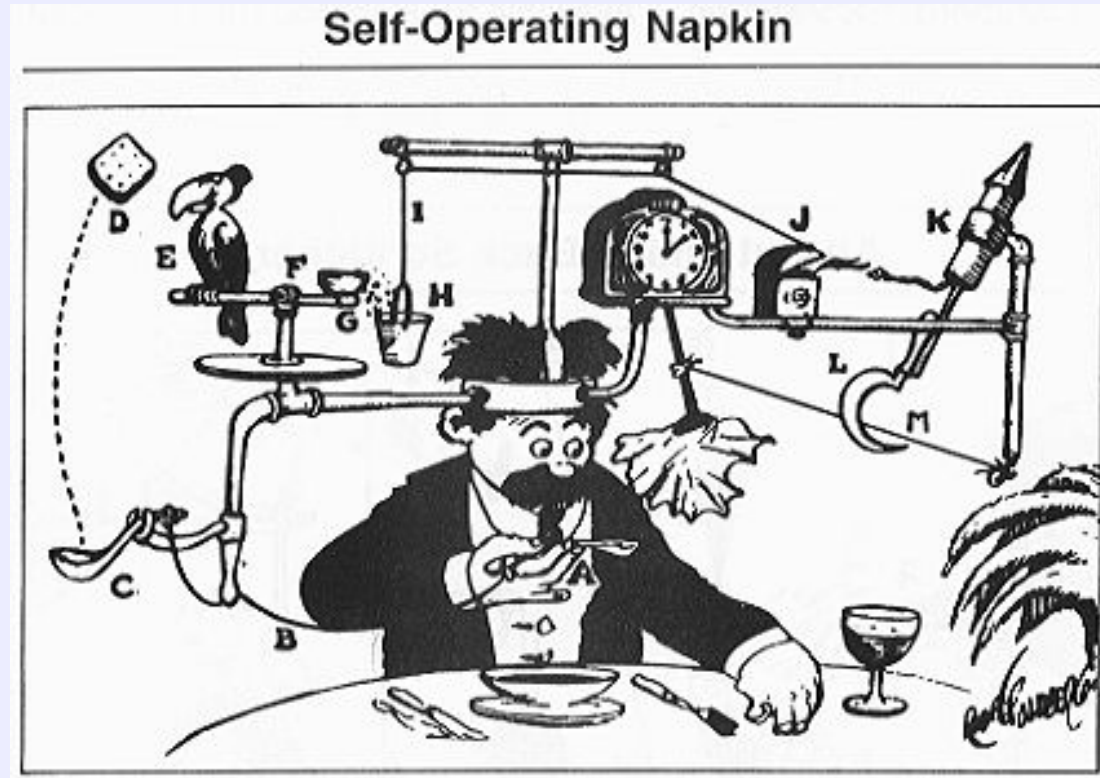
Generated Plans Are Saved Downloads [↗](#)

[Generate Plan](#)

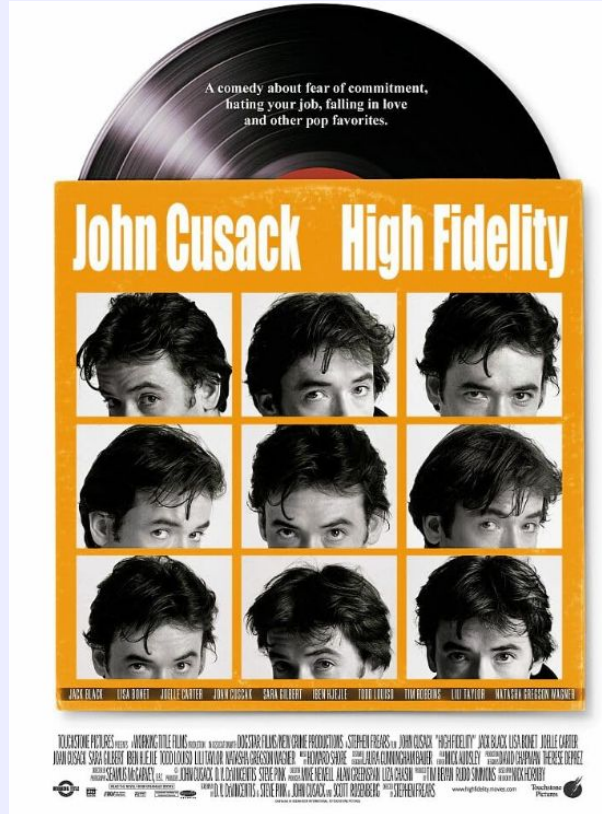
Feasibility / Prototype Pitfalls & How to Avoid Them



Feasibility / Prototype Pitfalls & How to Avoid Them



Feasibility / Prototype Pitfalls & How to Avoid Them



Feasibility / Prototype Pitfalls & How to Avoid Them



Estimating is Hard

- Monte Carlo Simulation
- Measure Performance During Prototype
- Monitoring



Summary & Conclusion

AI Can Help Us Run Discovery, but also Adds to What We Should Discover

Productivity

Using AI to make discovery tasks less expensive and more effective

AI in the Product

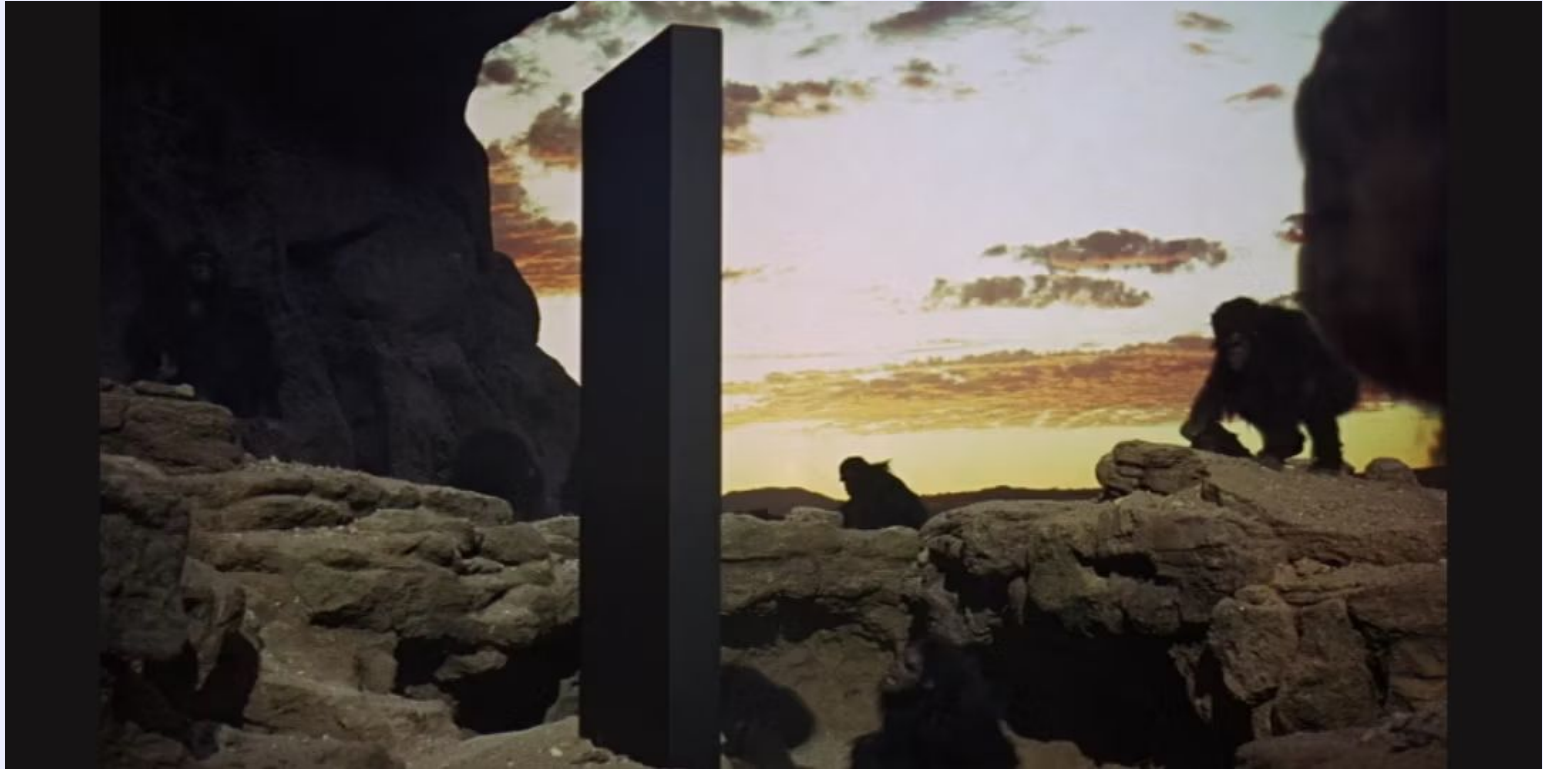
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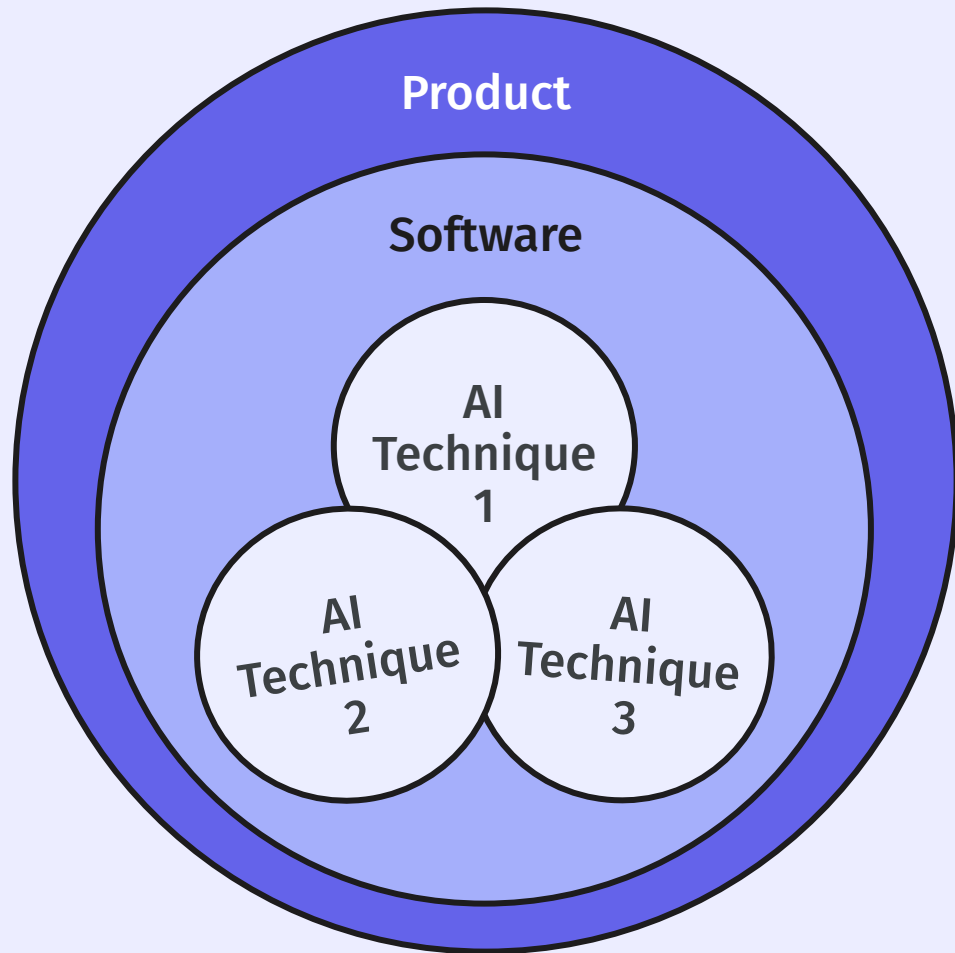
Using Feasibility Studies to Ensure Our Products **CAN** be Built

AI Isn't a Monolith!

Be Specific About Problems & Approaches



Don't Stop When You Find Your First AI-able Thing



**Remember, AI changes how we make software,
but we're still making software.**



Slides in Reserve

