YNOMIA
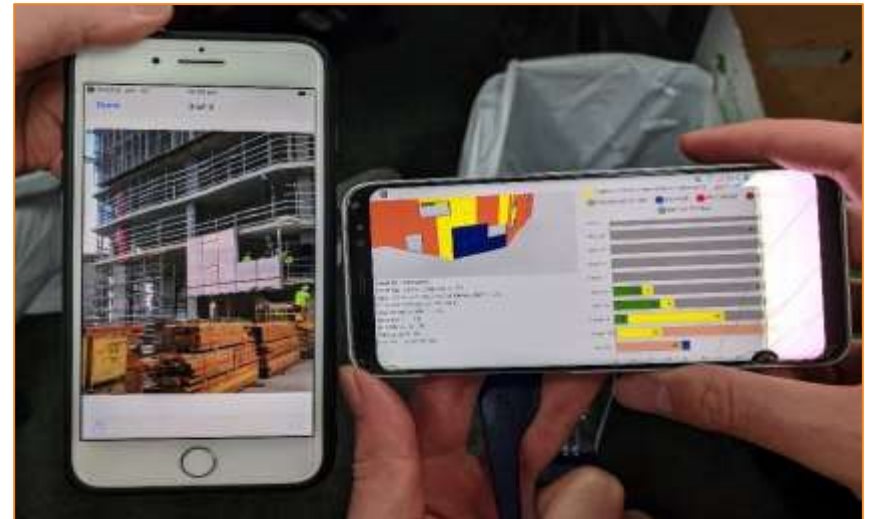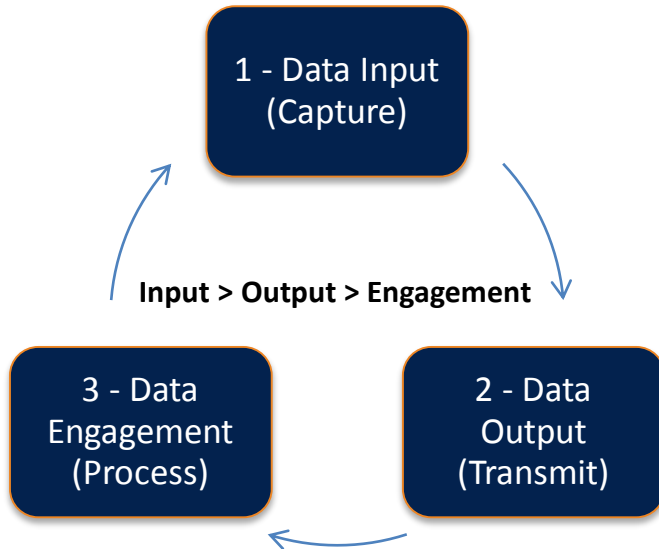
Benefiting from Industry 4.0 – Best practices for integration of IoT in construction

"Industry 4.0" - what are we talking about?

Objective: Your IoT playbook

1 - Data Input (Capture)

Input > Output > Engagement

3 - Data Engagement (Process)

2 - Data Output (Transmit)

Careful, construction differs from manufacturing.

"Technology, it's great when it works!"

No one buys technology…

We buy the time and cost-savings associated with the simplification of complex, costly tasks.

About me: All paths lead somewhere…

Matthew Lickwar

Y N O M I A

"Static production line"

"GIS Mapping Systems"
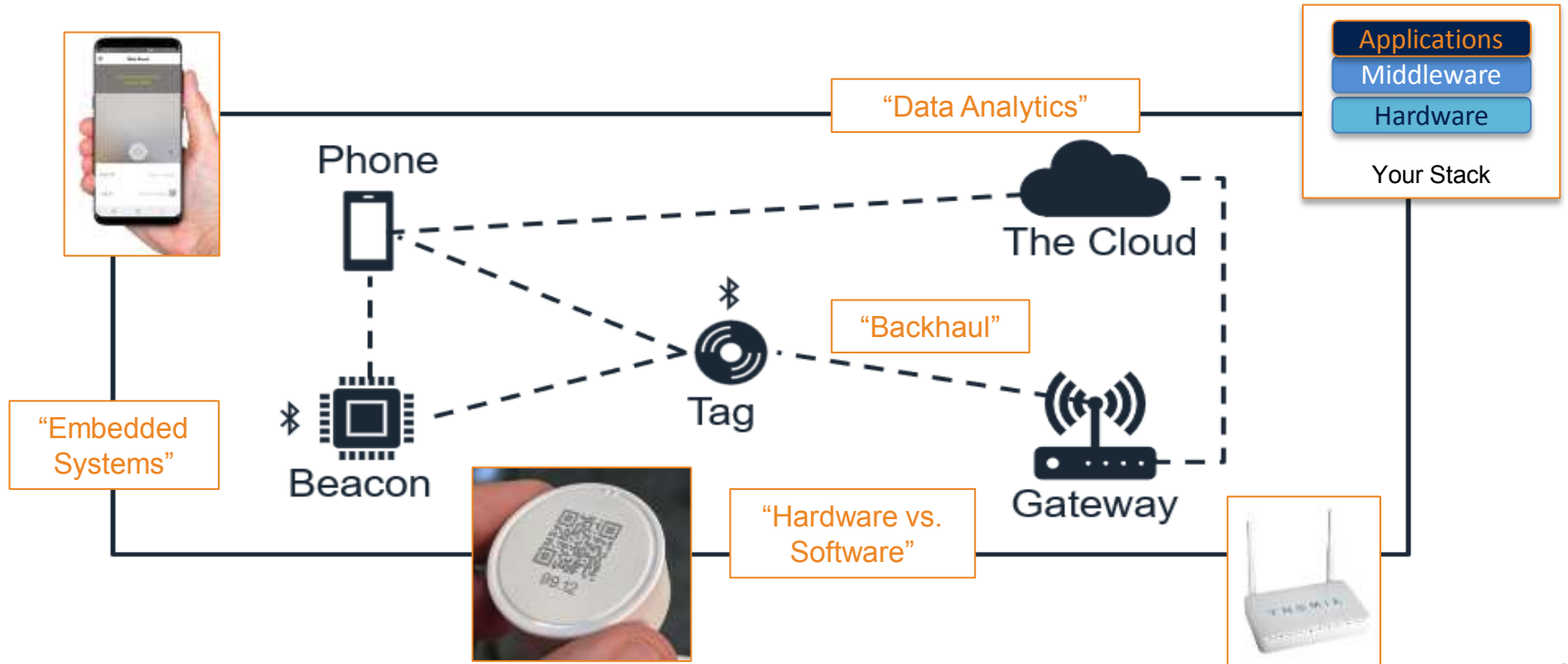

"Dynamic production line"

Y N✺M I A

Accurate. Reliable. Automated construction data in real-time.
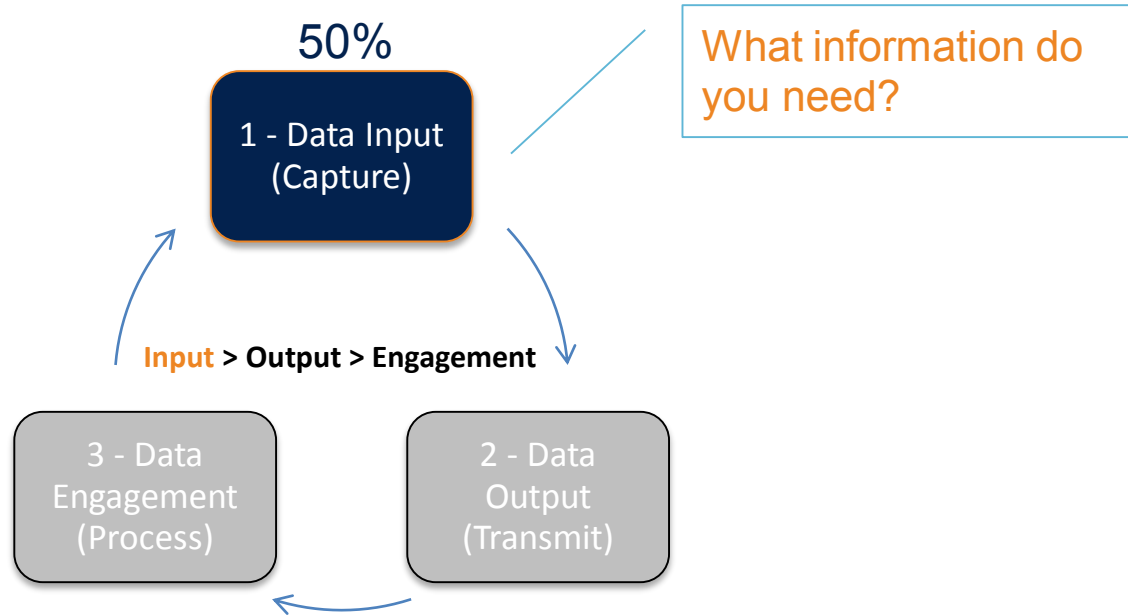

We believe teams with access to the real-time data of project activity democratises and enables better decision-making.

Lexicon & Definitions: Understand the pieces of any solution – function & form.

Phone

The Cloud

"Data Analytics"

Applications
Middleware
Hardware

Your Stack

"Backhaul"

Tag

"Embedded Systems"

Beacon

Gateway

"Hardware vs. Software"

Your Playbook,
Step 1: Capture

50%

1 - Data Input (Capture)

What information do you need?

Input > **Output** > **Engagement**

3 - Data Engagement (Process)

2 - Data Output (Transmit)

Foundations for Success:
Understand your problem – look to your organisation.

- In: Questioning & Discovery

  - What business process is problematic?
  - What data, at which point, takes away the pain?
  - Why is the way it is? (again why?)
  - Who owns it? (Prob. & Soln.)
  - Organisational mentality
  - Benchmark existing BAU
  - Boundary conditions for scope & output (existing systems)
  - *Genchi Genbutsu*

- Out: Supplier, scope and solution

- Case Study:

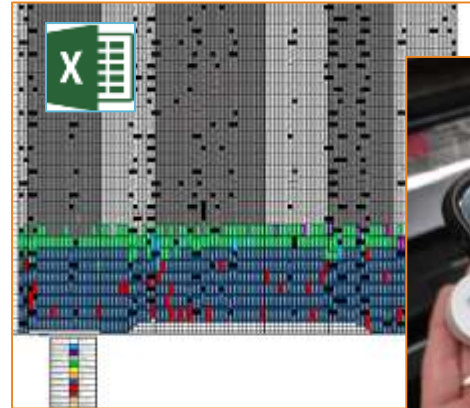A Ynomia high value material tracking (HVMT) project

Guidance: How valuable is your problem?

A few focus areas worth considering…

- Different expectations

- Cost (unit economics)

- IoT solution.; technical limitations (ex. radio frequency)

Case Study:

Automated capture of supply chain status replaces manual tracking.

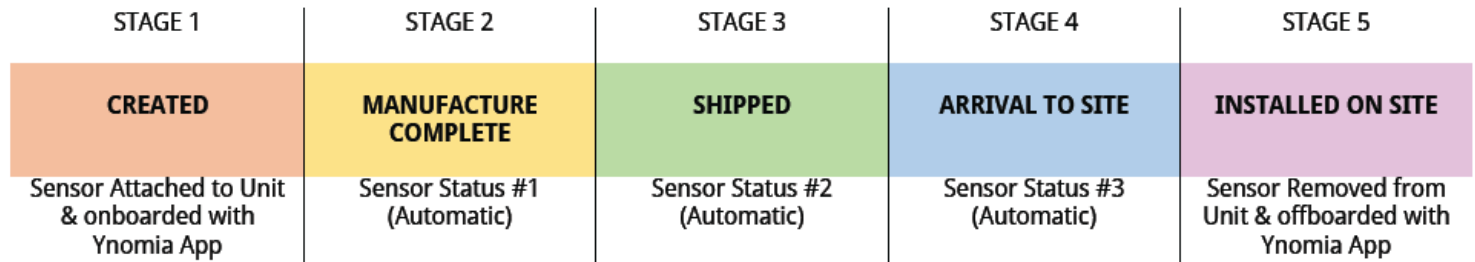# Execution Plan: Have one. Expect to change it.

- Hypothesis (Lean canvas)
  - Test assumptions

- Metered approach:
  - Proof of concept (POC) > Scaled roll-out

- Focus *
  - Are you reducing waste or building a new business model?
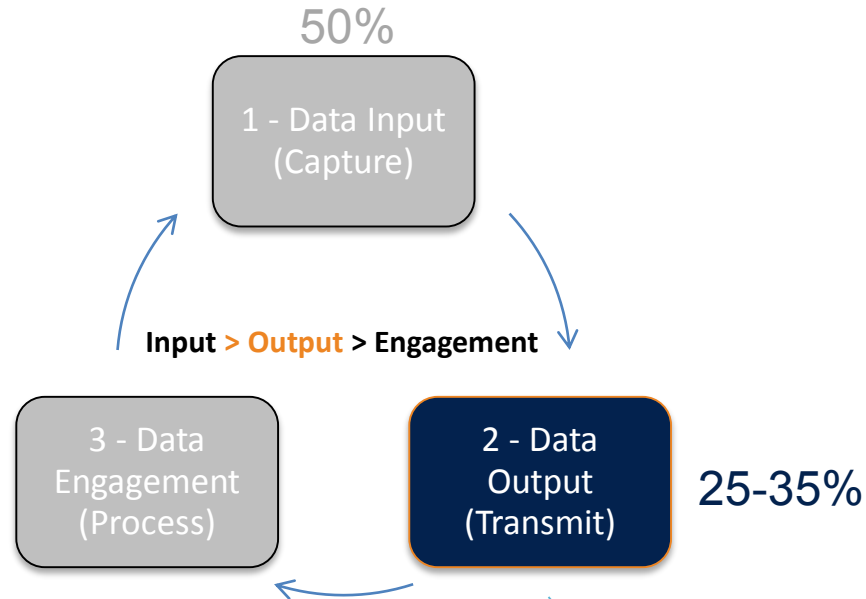 - Measure what matters – avoid distractions

Case Study: Supply chain tracking, progress as well as contract validation ($)

REAL-TIME STATUS UPDATES

Example supply-chain tracking statuses:

STAGE 1	STAGE 2	STAGE 3	STAGE 4	STAGE 5
CREATED	**MANUFACTURE COMPLETE**	**SHIPPED**	**ARRIVAL TO SITE**	**INSTALLED ON SITE**
Sensor Attached to Unit & onboarded with Ynomia App	Sensor Status #1 (Automatic)	Sensor Status #2 (Automatic)	Sensor Status #3 (Automatic)	Sensor Removed from Unit & offboarded with Ynomia App

Your Playbook,
Step 2: Output/Transmit

50%

1 - Data Input
(Capture)

Input > **Output** > **Engagement**

3 - Data
Engagement
(Process)

2 - Data
Output
(Transmit)

25-35%

How do we collect it?

Internet of Things: is the internet everywhere?

- Connectivity: Where is the data you need created?

  - Frequency, quantity, timeliness (of devices & data)

  - Cost to get it

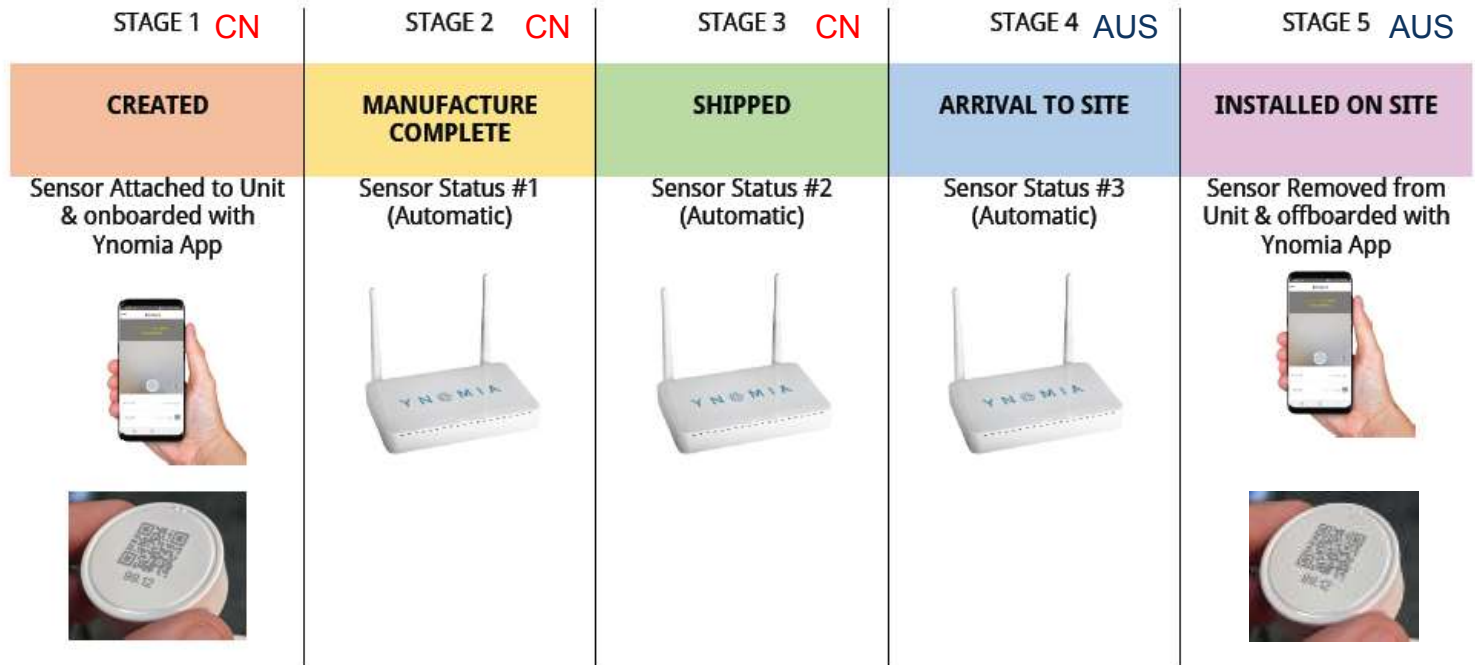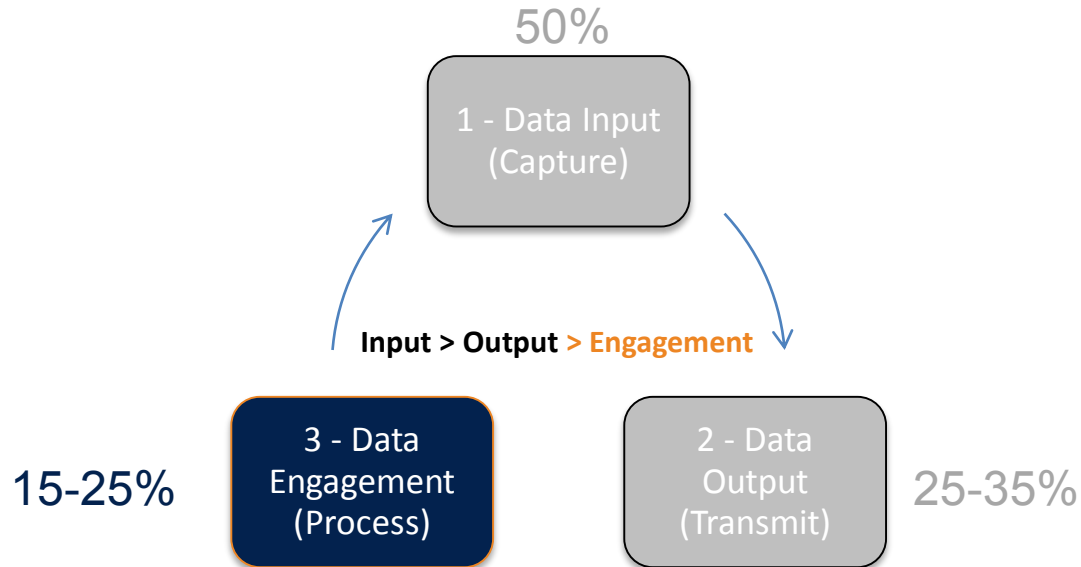 - Technical Limitations (ex. environment, ISM spectrum)

- Case Study:

Case Study: make connections simple. Ensure you can define and monitor critical points (remotely).

REAL-TIME STATUS UPDATES

Example supply-chain tracking statuses:

STAGE 1 CN	STAGE 2 CN	STAGE 3 CN	STAGE 4 AUS	STAGE 5 AUS
CREATED	**MANUFACTURE COMPLETE**	**SHIPPED**	**ARRIVAL TO SITE**	**INSTALLED ON SITE**
Sensor Attached to Unit & onboarded with Ynomia App	Sensor Status #1 (Automatic)	Sensor Status #2 (Automatic)	Sensor Status #3 (Automatic)	Sensor Removed from Unit & offboarded with Ynomia App

Your Playbook,
Step 3: Engagement

50%

1 - Data Input
(Capture)

Input > Output > Engagement

15-25%

3 - Data
Engagement
(Process)

2 - Data
Output
(Transmit)

25-35%

How to solve the "last mile" problem

Know your customer: Now can we answer the burning questions? Hint: See Step 1.

- Visualisation
  - Ex. Interactive, active/passive

- Visibility (who can see it?)

- Accessibility (one or many)

- New data: improve tendering?

- Integration/Existing Systems (ex. ERP)

Case Study: How do you view the data of an entire supply chain?

Ynomia Solution Case: Visibility of Critical Path Supply Chain

@China Manufacturing
See Production Rate

@Australia Warehouse
See Stock

@Australia Site
See Install Progress

Case Study: 3D Real-time Model
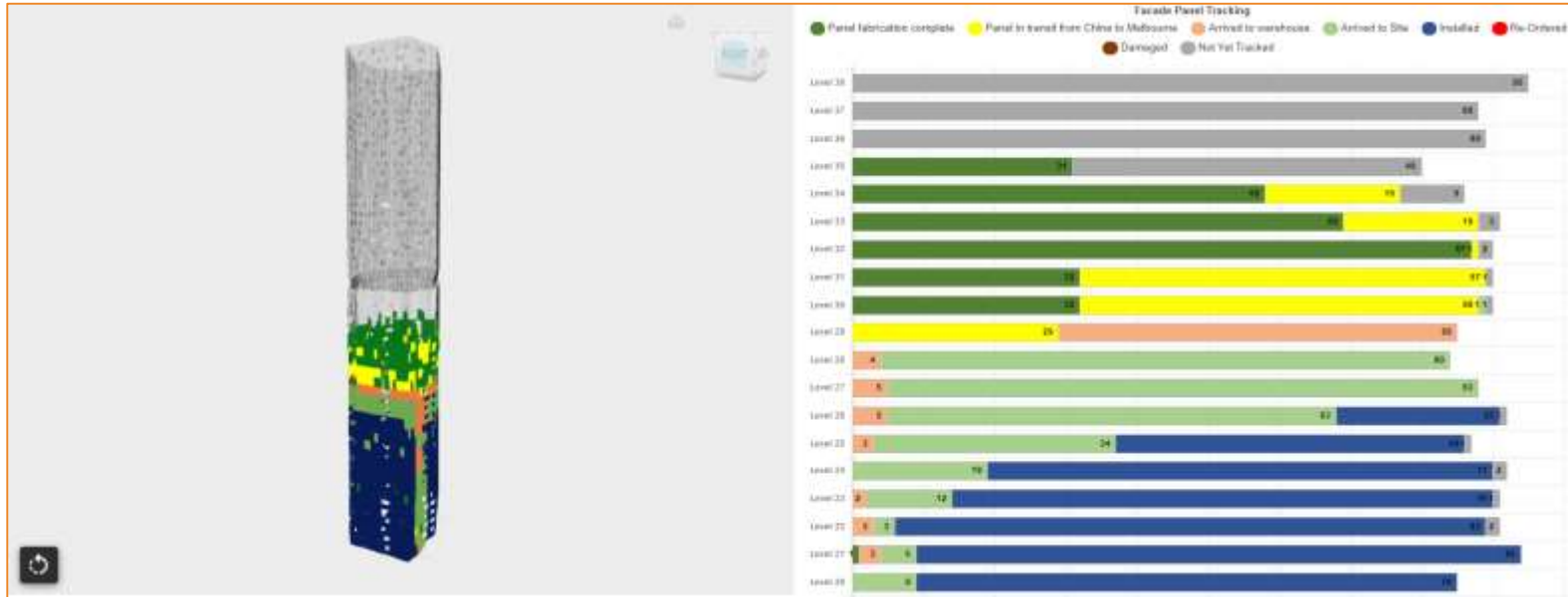
Case Study: Operational Dashboard

Recap: Your playbook

Lean: Feedback cycles

What information do you need?

50%

1 - Data Input (Capture)

15-25%

3 - Data Engagement (Process)

2 - Data Output (Transmit)

25-35%

How to solve the "last mile" problem

How do we collect it?

Thank you!

Y N O M I A

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