

# DELIVERING REAL-TIME RESULTS

## The Future of Laboratory Operations



Bob Tuttle, CEO  
Agile Frameworks



Jim Murphy, CEO  
Strata, Inc.

# Challenges Facing CoMET Firms

## Information Management

- Efficiency
  - Non-redundant input
- Veracity
  - Accuracy
  - Quality
  - Verification
- Dissemination
  - Timeliness for impact
- Retention
  - Contractual/jurisdictional/legal obligations
  - Security
  - Auditability

# Moving CoMET Firms into the Future

- Understand desired outcomes
- Map the necessary process workflow
- Harness tools (technology) to achieve outcomes
- Audit and continuously evolve

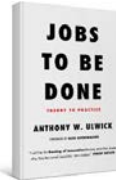
. . . . .

## **FRAMEWORK TO MAKE THIS HAPPEN:**

Outcome Driven Innovation & Jobs to be Done

# Outcome Driven Innovation & Jobs to be Done

*JTBD: A strategy and innovation framework by Tony Ulwick*



**Step 1:** Define the customer's 'job-to-be-done'

**Step 2:** Uncover the customer's needs

**Step 3:** Quantify the degree each outcome is underserved

**Step 4:** Discover hidden segments of opportunity

**Step 5:** Align existing products with market opportunities

**Step 6:** Conceptualize new products to address unmet outcomes

*ODI: A strategy and innovation theory by Clayton Christensen*



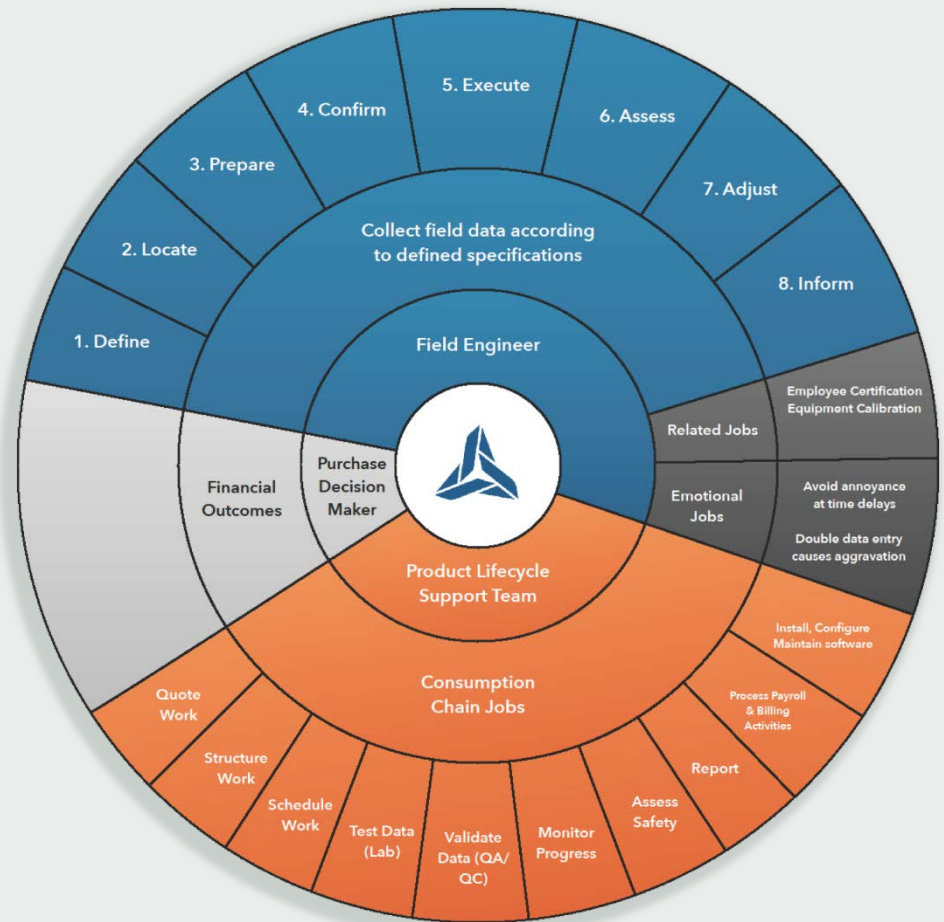
## INDUSTRIAL COMPANIES USE ODI



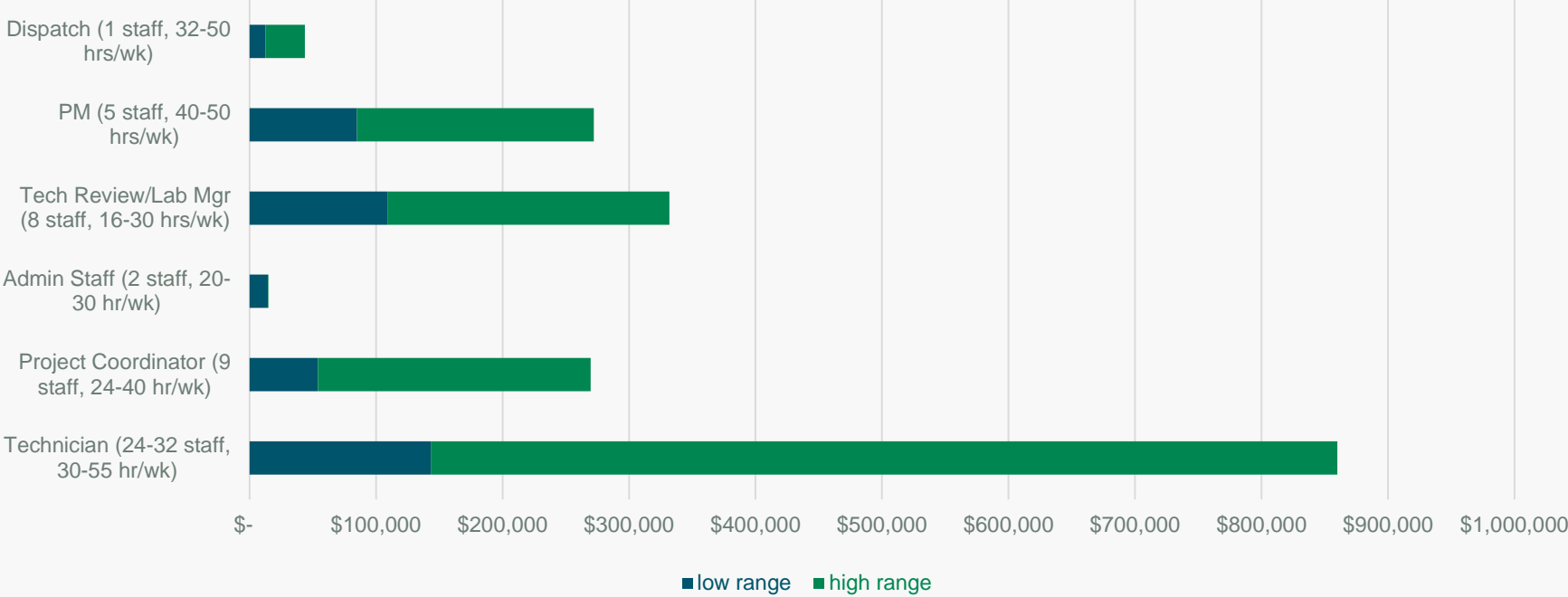
# Outcome Driven Innovation & Jobs to be Done

.....

Core Job = Field Engineer ⇒ ⇒ ⇒



# Opportunity Cost By Role - Atlanta Office



The future is efficiency through people, process, and technology.  
 Common inefficiencies found in engineering, environmental and construction materials testing organizations with a significant cost savings opportunity.

# Case Study: Strata, Inc.

- Philosophy of harnessing tools
- Process for streamlining company operations for the field/lab and beyond
  - Training
  - QMS
  - Safety
  - Radioactive materials program
  - HR (aspirational)
- Single source repository for records
- Results

# Example – Laboratory Accreditation

- Influence of AMRL/CCRL – AASHTO R-18 grew by 300% in 2017
- Complexity of Standards – ASTM vs. AASHTO vs. DOTs
- Audits – preparation is day-to-day process, not one-off endeavor
- Personnel Training – Every person/Every test
  - Initial
  - Competency verification
- Equipment
  - Inventory
  - Calibration
  - Maintenance
- Chain of Custody
  - Samples
  - Equipment
  - Personnel



# Example – Training

\*\*\*\*\*

**STRATA**  
**ASTM C31 / AASHTO T23 - PERFORMANCE EXAM CHECKLIST**  
**MAKING AND CURING CONCRETE TEST SPECIMENS IN THE FIELD**

Effective Date: 06/12/2018 Document Control No.: 507.24  
Supersedes: 01/30/2015

---

Office Location: Spokane Assessment Date: 08/01/2019  
Employee Name: OLSON, MICHAEL Examiner Name: MURPHY, JAMES  
Training Type: ☒ Initial Training ☐ Periodic Training

---


SECTION I	TRIAL 1	TRIAL 2
1. Molds placed on a level, rigid, horizontal surface free of vibration?	PASS	PASS
2. Representative sample selected?	PASS	PASS
3. Making of specimens begun within 15 minutes of sampling?	PASS	PASS

SECTION II: FIRST LAYER	TRIAL 1	TRIAL 2
4. Concrete placed in the mold, moving a scoop or trowel around the perimeter of the mold to evenly distribute the concrete as discharged?	PASS	PASS
5. Mold filled approximately 1/3 full?	PASS	PASS
6. Layer rodded throughout its depth 25 times with hemispherical end of rod, uniformly distributing strokes?	PASS	PASS
7. Sides of the mold tapped 10 to 15 times after rodding each layer? <ul style="list-style-type: none"> <li>With mallet for reusable steel molds.</li> <li>With the open hand for flexible light-gauge molds.</li> </ul>	PASS	PASS

SECTION III: SECOND LAYER	TRIAL 1	TRIAL 2
8. Concrete placed in the mold, moving a scoop or trowel around the perimeter of the mold to evenly distribute the concrete as discharged?	PASS	PASS
9. Mold filled approximately 2/3 full?	PASS	PASS
10. Layer rodded 25 times with hemispherical end of rod, uniformly distributing strokes and penetrating 25 mm (1") into the underlying layer?	PASS	PASS
11. Sides of mold tapped 10 to 15 times with the mallet after rodding? <ul style="list-style-type: none"> <li>With mallet for reusable steel molds.</li> <li>With the open hand for flexible light-gauge molds.</li> </ul>	PASS	PASS

  
www.stratageotech.com

Page 1 of 2

**PERFORMANCE EXAM CHECKLIST**  
**TEST SPECIMENS IN THE FIELD**


Document Control No.: 507.24

---

	TRIAL 1	TRIAL 2
Perimeter of the	PASS	PASS
Distributing strokes	PASS	PASS
	FAIL	PASS
Trowel or float?		PASS
		PASS

TRIAL 1	TRIAL 2
FAIL	PASS

  
James P. Murphy  
Chief Executive Officer  
Page 2 of 2

# Example – Quality Management System

\* \* \* \* \*

STRATA

QUALITY MANAGEMENT SYSTEM MANUAL

Effective Date: 04/01/2019  
Supersedes: 01/22/2019

Document Control No.: 500.0  
Page: 1 of 19



Reviewed and Approved By:

  
Chief Executive Officer

  
Technical Director or Responsible Professional

  
Corporate Quality Manager

This Quality Management System Manual is the property of STRATA. It must not be reproduced in whole or in part or otherwise disclosed without prior written consent.

The official controlled copy of the Quality Management System Manual is the digitally signed PDF document held within STRATA's network server and visible to all authorized users. All printed copies, electronic copies and versions, except the one described above, are considered uncontrolled copies which should be used for reference only.

# Example - Safety

**STRATA** Safety Incident

Client: [REDACTED]

Name: [REDACTED] Time of Incident: 12:30  
Date Recorded: 06/21/2018 Supervisor: [REDACTED]  
Weather A Factor?: No  
Temperature (°F): [REDACTED] Precipitation: [REDACTED]  
PPE Used: Seat Belt: [REDACTED]  
Incident Location: [REDACTED]

**Incident Description:**  
Driving approx. 35 mph down PG 111 from my camp site to the hot plant, the curve I attempted to avoid the deer and slid off the road where I hit a tree a few inches and a 2nd degree burn to my arm from the air bag, I a mechanic shop.

**Injury:** No

**Damage Description**  
Type: Vehicle  
Description of Damage: Hood, bumper, grill, both front fenders severely Value: \$10,000 - \$50,000  
Preventative Measures: Drive slower along the gravel roads as there are  
**Follow Up:**  
Damage Follow Up  
Property/Insurance Claim Filed By: [REDACTED]

**Root Cause Analysis**  
What Happened?: Vehicle hit a deer  
Why Did It Happen?: The deer was in the road around a blind corner  
Causal Factor(s)  
(3) Proper Procedures Takes More Time/Effort / (8) External Factor


**STRATA** Safety Incident Report

Report #: SIR-000001  
Vehicle Accident GP18017A  
7/1/2019


Client: [REDACTED] Project: [REDACTED]  
Spokane, WA 99208  
Phone: 509.891.1604  
Spokane, WA 99205-3727

Name: [REDACTED] Time of Incident: 04:50 Date of Incident: 07/01/2019  
Project Number: [REDACTED] Date Recorded: 07/01/2019 Supervisor: [REDACTED]  
Weather A Factor?: No  
Temperature (°F): [REDACTED] Precipitation: [REDACTED] Wind: [REDACTED]  
PPE Used: Safety Toe Boots / Seat Belt: [REDACTED]  
Incident Location: South West corner: [REDACTED]  
**Incident Description:**  
I tried to park around a sharp corner near the pump truck. Loose rock and cement blocks tipped over, causing two dents/scraps alongside the bottom of the passenger side of the company vehicle  
**Witnesses?:** Yes  
**Witness**  
Name: [REDACTED] Telephone Number: [REDACTED]  
Injury: No  
**Damage Description**  
Type: Vehicle Description: White, crew cab  
Description of Damage: Two dents/scraps along bottom passenger side of vehicle  
Value: \$10,000 - \$50,000 Estimated Damage: \$1,000-\$5,000  
Preventative Measures: Should have found a different place to park  
**Follow Up:**

**Photographs**



Description: Dent



Description: Dent

Page 1 of 1

# Q & A

.....