



# Innovation in Supply Chain Finance

Using AI to Optimize Liquidity

**Craig Jeffery**, Strategic Treasurer

**Vincent Beerman**, Taulia

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# Today's Presenters

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**Craig Jeffery, CCM, FLMI**

*Founder & Managing Partner*

Strategic Treasurer

**Craig Jeffery** formed Strategic Treasurer LLC in 2004 to provide corporate, educational, and government entities direct access to comprehensive and current assistance with their treasury and financial process needs. His 20+ years of financial and treasury experience as a practitioner and as a consultant have uniquely qualified him to help organizations craft realistic goals and achieve significant benefits quickly.



**Vincent Beerman**

*Director of Product, AI & UX*

Taulia

**Vincent Beerman** is Taulia's Director of Product for AI and UX. He works with all of Taulia's customers (buyers and suppliers) to expose data and machine learning insights. His career has been focused on information architecture and creating systems that engage and motivate humans, from industrial automation to social gaming to B2B security and now trade finance. His team was awarded the 2017 SCF Innovation of the Year award for its use of artificial intelligence to optimize pricing, packaging and timing of early payment offers.

# Topics of Discussion



## Setting the Stage

- Treasury's Situation: Challenges & Considerations
- Key Functions & Roles

## Intro to Working Capital & SCF

- Treasury's Stake in SCF
- Defining Key Terms

## Introduction to AI & Disruptive Technology

- The Spectrum of Disruptive Tech
- Intro to Artificial Intelligence (AI)
- The AI Landscape

## Using AI to Optimize Liquidity

- AI Considerations for Supply Chain Finance
- The Role of Data in Facilitating AI Functionality
- AI in Action: Case Study

## Final Thoughts, Q&A

# Treasury's Situation

## Major Areas of Coverage

- *Liquidity Management*
- *Working Capital Optimization*
- *Financial Risk Management*
- *Cash Management*
- *Business Advisory*

## Treasury's Situation: Challenges & Considerations

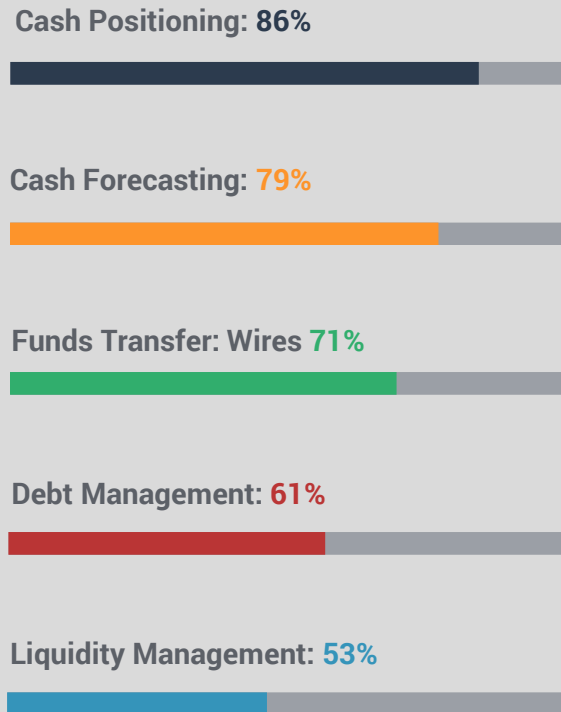


# Treasury's Situation

## Top Treasury Responsibilities

**Corporates:** What functions do you use or need in treasury? (Select all that apply)

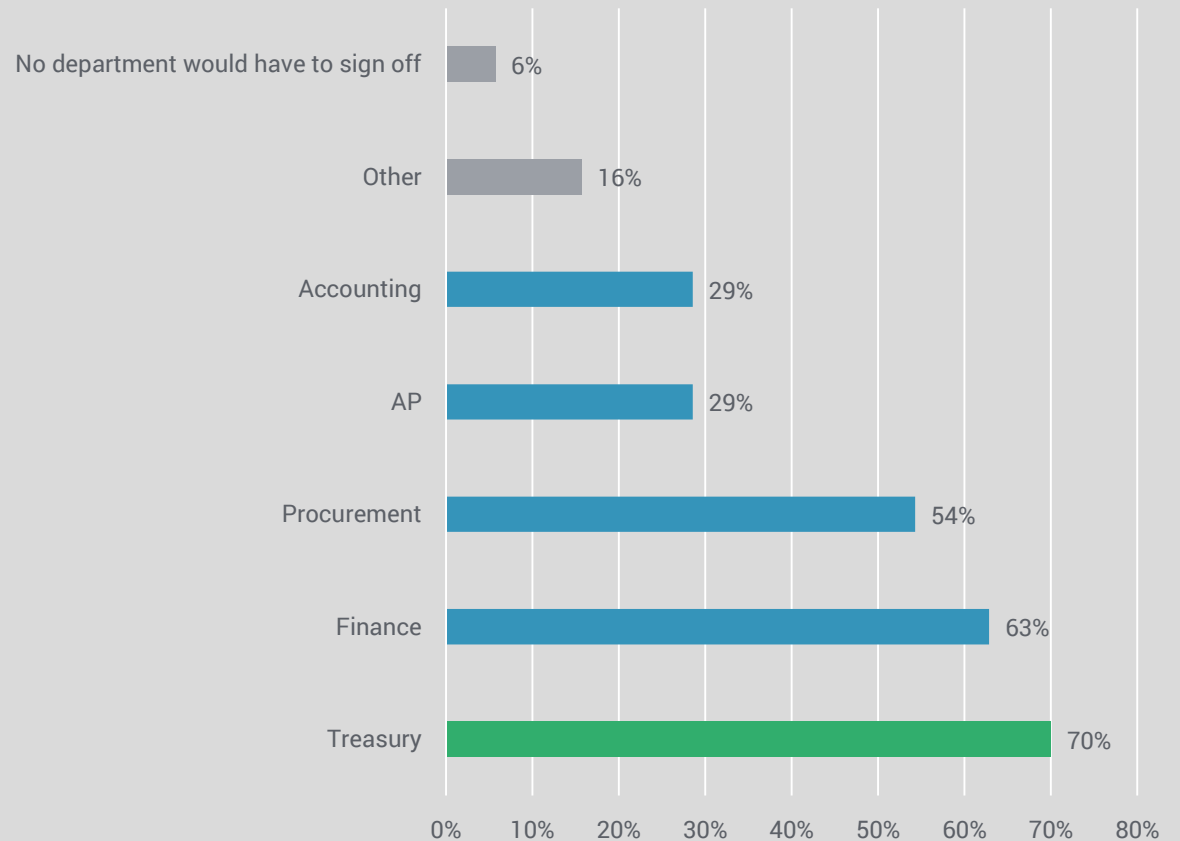
*\*Not all answer choices shown below*



2017 Strategic Treasurer & TreasuryXpress Technology Use Survey

## Treasury's Position: A Key Stakeholder in Finance-Related Projects

Which departments would have to sign off on or approve the use of an SCF program before it was adopted? (Select all that apply)



2017 Strategic Treasurer Supply Chain Finance Survey

# Treasury's Stake in SCF

## Treasury & Supply Chain Finance



**01** Treasury is the steward of working capital and liquidity internally

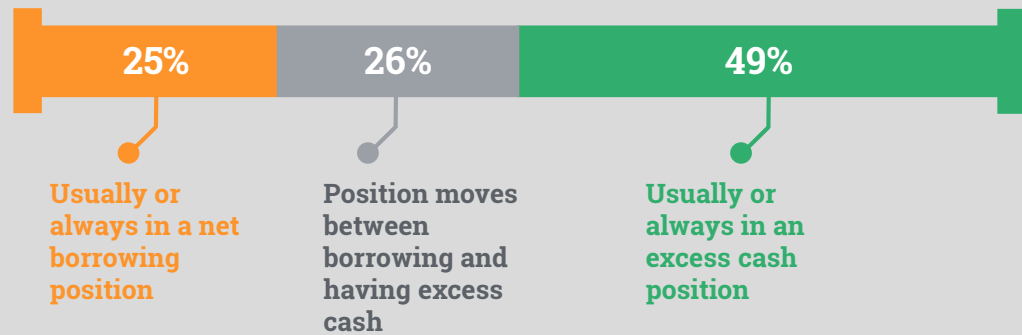


**02** Working capital is heavily impacted by vendor payment terms, financing options, and other elements of the cash conversion cycle



**03** As a prerequisite of optimizing working capital, treasury must be able to effectively manage their supply chain.

## Corporates: Which of the following best describes your balance sheet for working capital requirements:



- Although nearly half of corporates almost always find themselves in an excess cash position, uncertainty in the economic environment still prevails and so optimizing working capital can “future-proof” your business.
- Regardless of their working capital position, the SCF options available to corporates can involve the use of own funds or third-party cash. Either way, opportunities to optimize liquidity through SCF are widespread and available to companies of all sizes and positions.

2018 Strategic Treasurer, Bottomline, & Bank of America Merrill Lynch B2B Payments & WCM Strategies Survey

## Liquidity & Working Capital 101



### Working Capital

The available cash and other current, “liquid” assets available to a company to satisfy short-term cash flows.

Generally, working capital management can be thought of as the optimization of current assets and current liabilities.



### Current Assets

- Cash or Cash equivalents
- Accounts Receivable
- Inventory



### Current Liabilities

- Accounts Payable
- Outstanding CP Issues, Interest payments, etc.



### Cash Conversion Cycle

A primary measure of a firm’s working capital efficiency, which is comprised of three components:

- Days Payable Outstanding (DPO),
- Days Sales Outstanding (DSO), and
- Days Inventory (DIO).

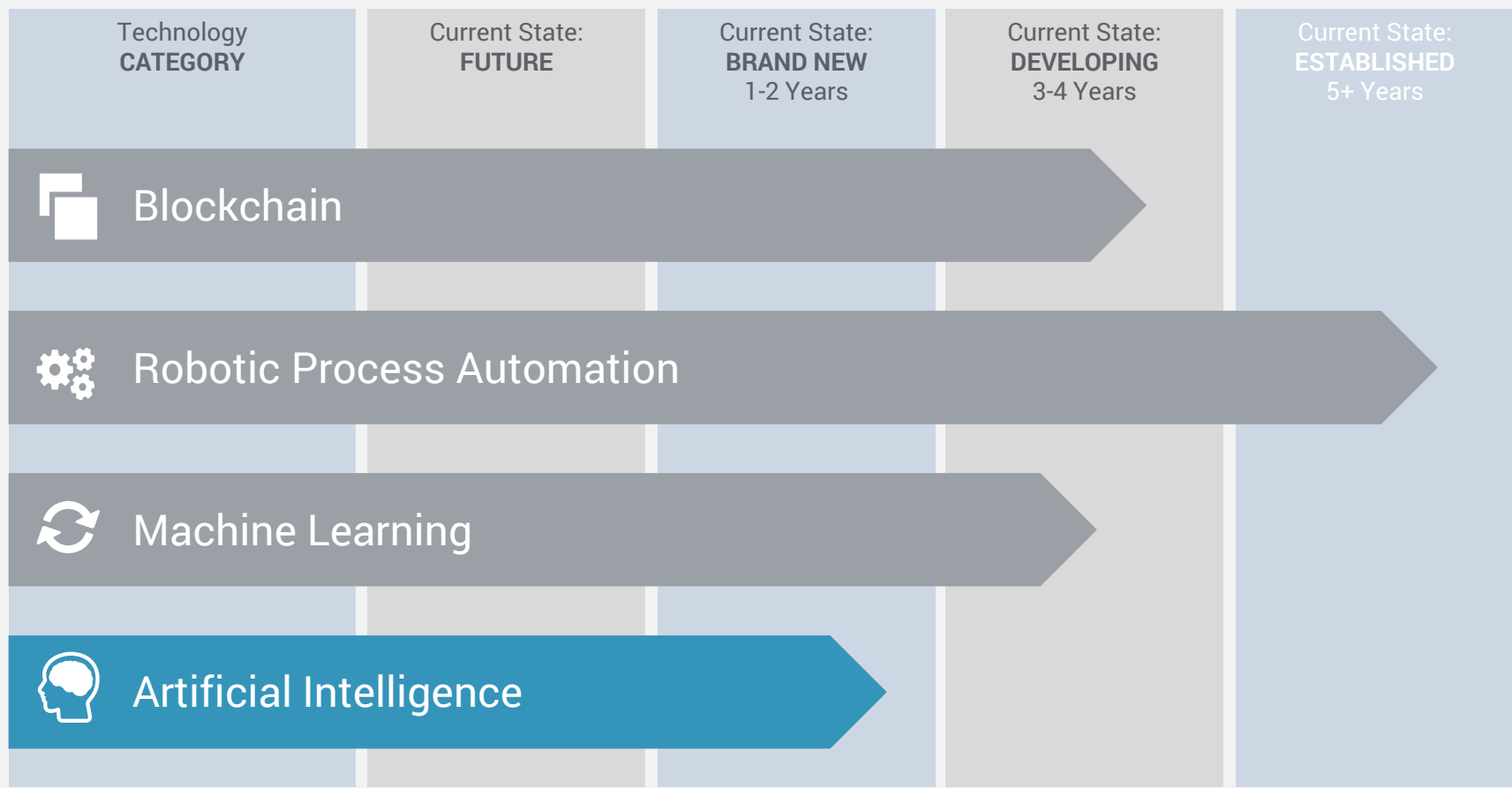


### Key Metrics for Measurement

- **Cash Conversion Cycle** = DSO + DIO – DPO
- **DPO** = Accounts Payable/COGS x 365
- **DSO** = Accounts Receivable/Revenue x 365
- **DIO** = Inventory/COGS x 365

# Introduction to Disruptive Technology

## Disruptive Technologies Development Landscape (Adoption)





# Artificial Intelligence (AI): An Overview



## Artificial Intelligence (AI)





### Overview & Definition

- Systems that are capable of leveraging structured and unstructured data and applying analytical methods to identify anomalies, relationships and solutions.
- AI can process data and identify solutions/correlations that a human would not be able to identify.

### Challenges

- Many organizations do not have adequate sophistication or access to the data necessary to justify the use of an AI solution.

**Machines thinking in a human-like manner. We are not talking about “self-aware” or completely autonomous solutions.**

-  Consumes vast amounts of structured and unstructured data and applies it to a specific, pre-defined objective
-  Identifies correlations or variables that would be extremely difficult for a human to discover
-  Can be given “free reins” with regard to a specific function
-  Requires guidance to help the AI to select problems and boundaries



### Current State

- Early in the lifecycle of highly functional AI applications for most areas of finance.

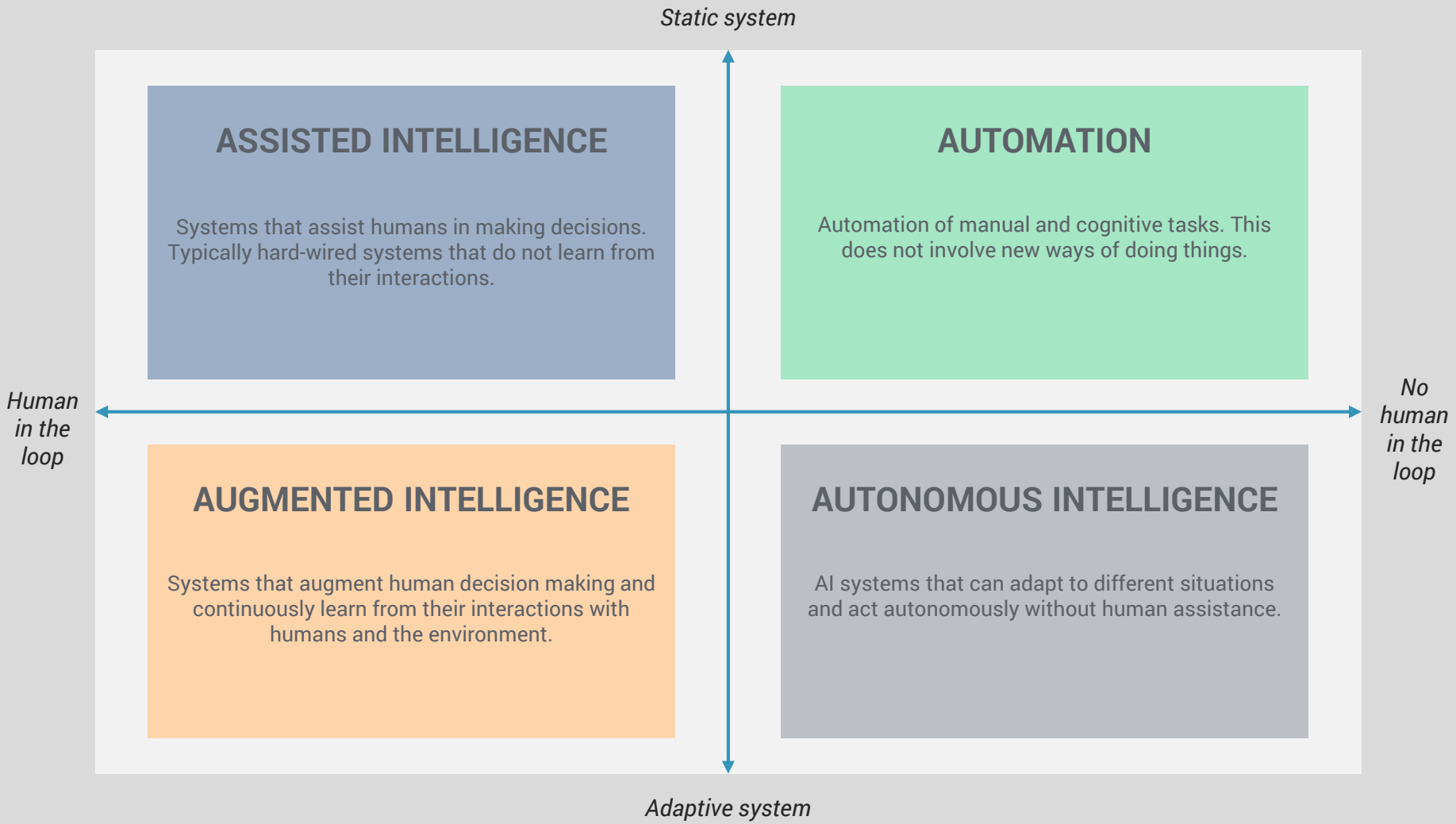


■ General Development    ■ Treasury Development

### Current Uses

-  Spend Analysis
-  Cash Forecasting
-  Investment Mgmt.
-  Fraud Monitoring

# AI Landscape



# AI Starts by Asking the Right Questions

When it comes to optimizing your financial supply chain...



How much cash *could* you unlock?



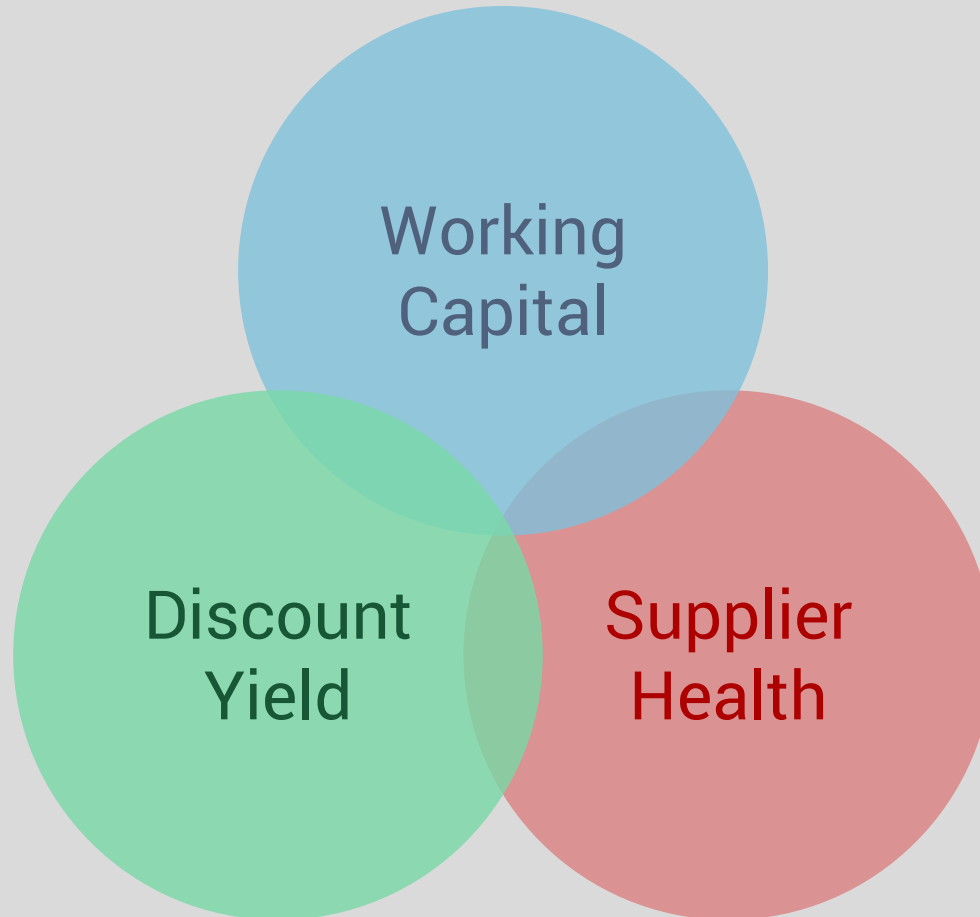
How will these actions *impact* your suppliers?



How much cash *should* you deploy?

# Every Supplier is an Opportunity and a Risk

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#WCGamechangers

# AI Requires Lots of Data



## Data Considerations for AI: What is Needed?

### Supplier Data

- Firmographics
- Credit rating
- Revenue
- Spend
- Payment terms over time
- Early payment behavior
- Invoicing behavior
- Purchase order trends

### Challenges

- Categorical data often not maintained in ERP system.
- Credit data expensive to maintain.

### Document Data

- Purchase Orders
- Invoices
- Payments
- ASN or other ERP docs
- Header info
- Line items
- Payment terms
- Payment details

### Challenges

- Multiple ERP instances create islands of data.
- Linking document data to supplier data is challenging.

### Transaction Data

- PO confirmations
- PO to invoice conversion
- Full P2P stage durations
- Invoice approval cycle
- Early payment offers
- Early payment acceptance
- Payment performance
- Supplier engagement stats

### Challenges

- Business networks help you understand supplier behavior across myriad scenarios.



# AI in SCF: Case Study

# Case Study

## Consumer Products Multinational

\$3Bn Spend

4962 Suppliers

57 Day DPO

### Max Cash

- Targeted terms extension campaign
- Minimize negative supplier health impact

### Max Yield

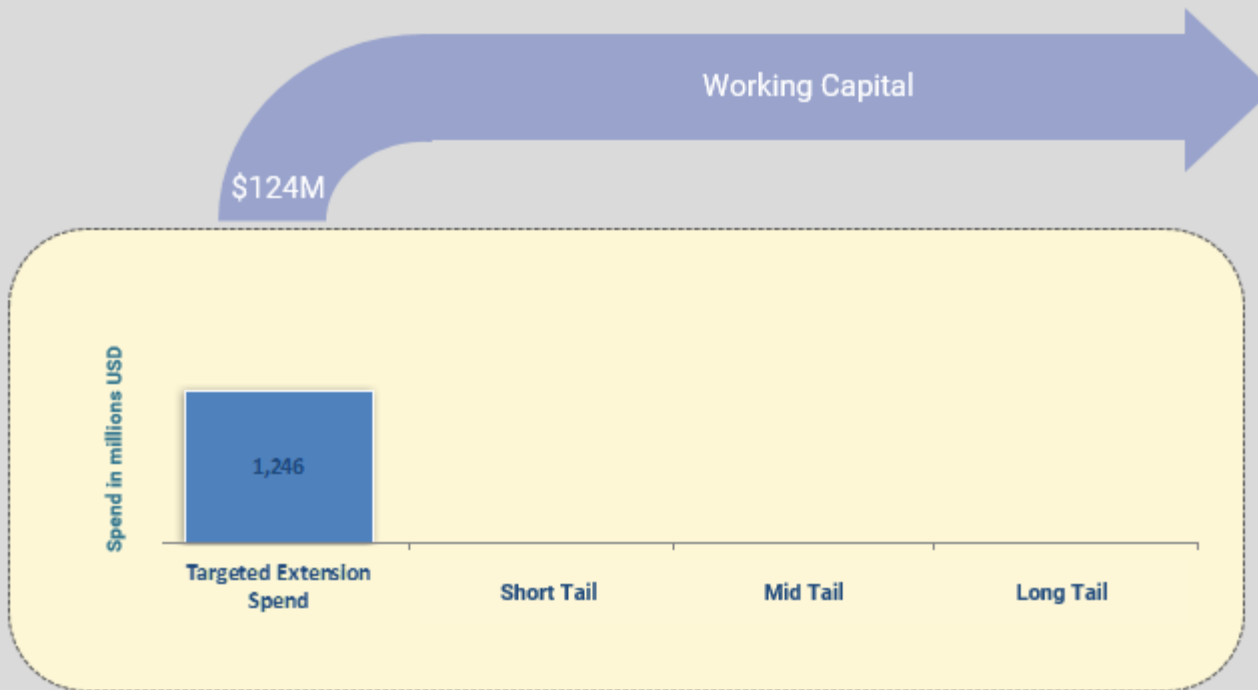
- Up to \$50M funding available
- 6% APR floor

### Blended Program

- Unlocked Working Capital should fully fund DD
- 8% APR floor

# Case Study: Max Cash (Pure Terms Extension)

## Shift Working Capital Requirement to Suppliers



### Business Impact

**\$124M  
Cash  
Unlocked**

**+**

**\$0  
Discount  
Yield**

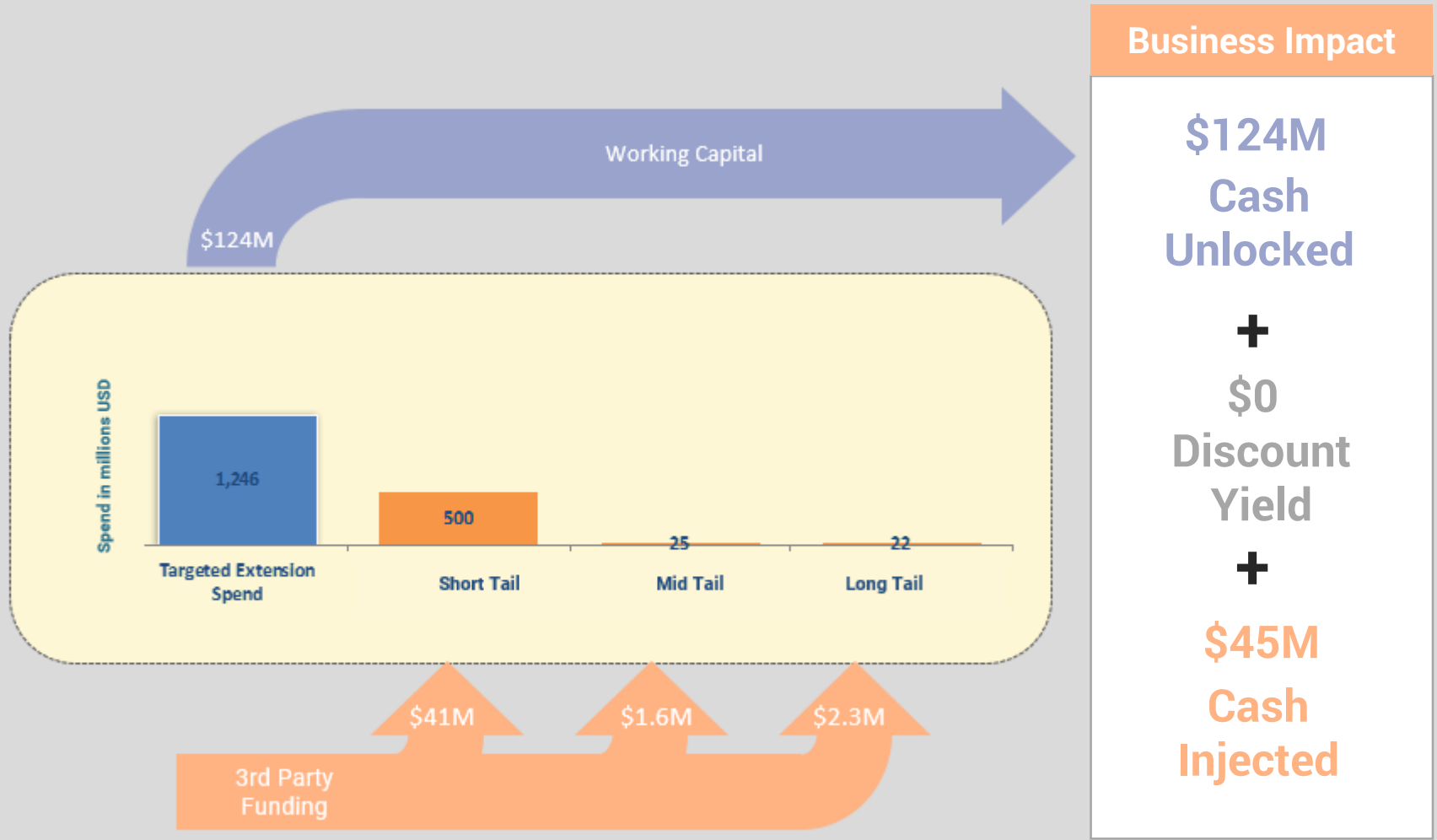
**+**

**\$0M  
Cash  
Injected**



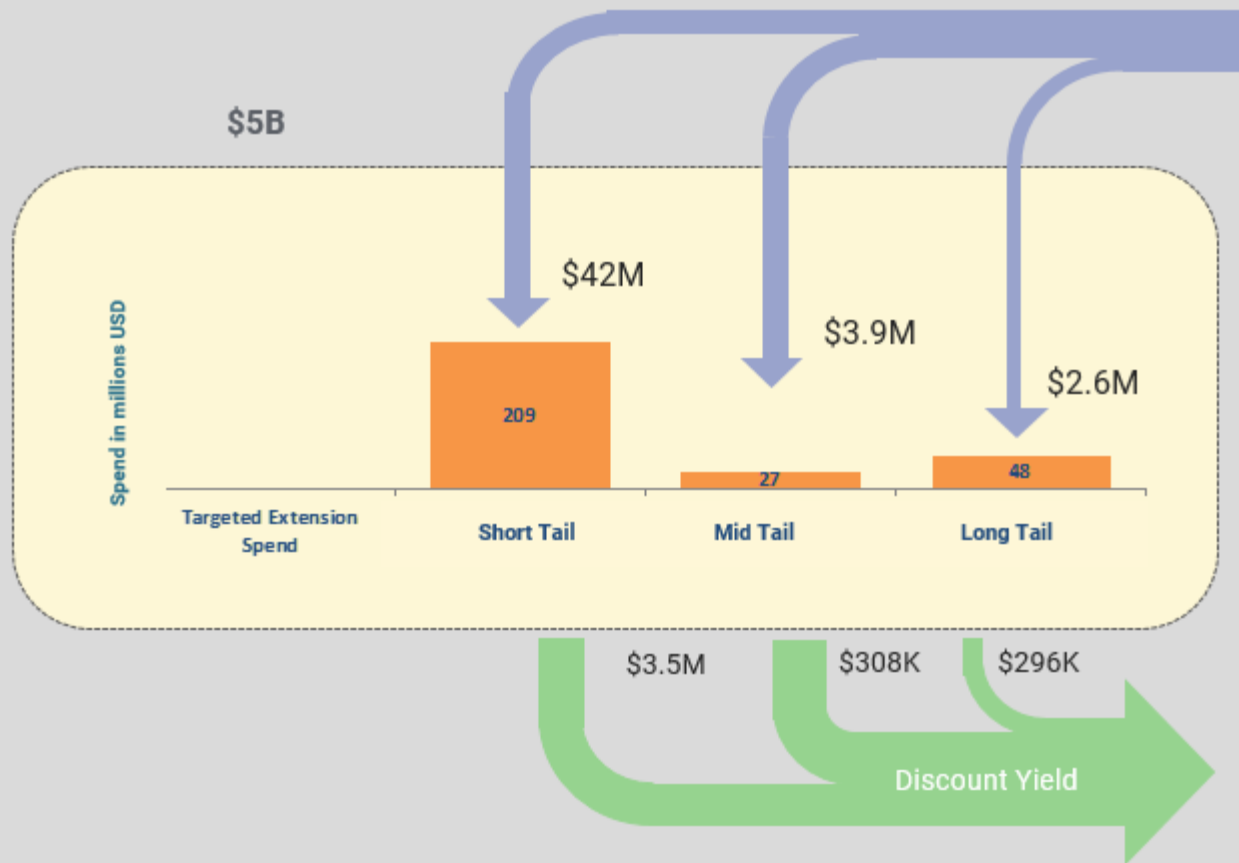
# Case Study: Max Cash (Terms Extension + SCF)

Unlock Cash from your Supply Chain and offer SCF to ensure Supplier health



# Case Study: Max Yield (Pure Dynamic Discounting)

Opportunistic self-funding drives discount yield with smaller suppliers



## Business Impact

**\$48M**  
Cash Deployed

**+**

**\$4.1M**  
Discount Yield

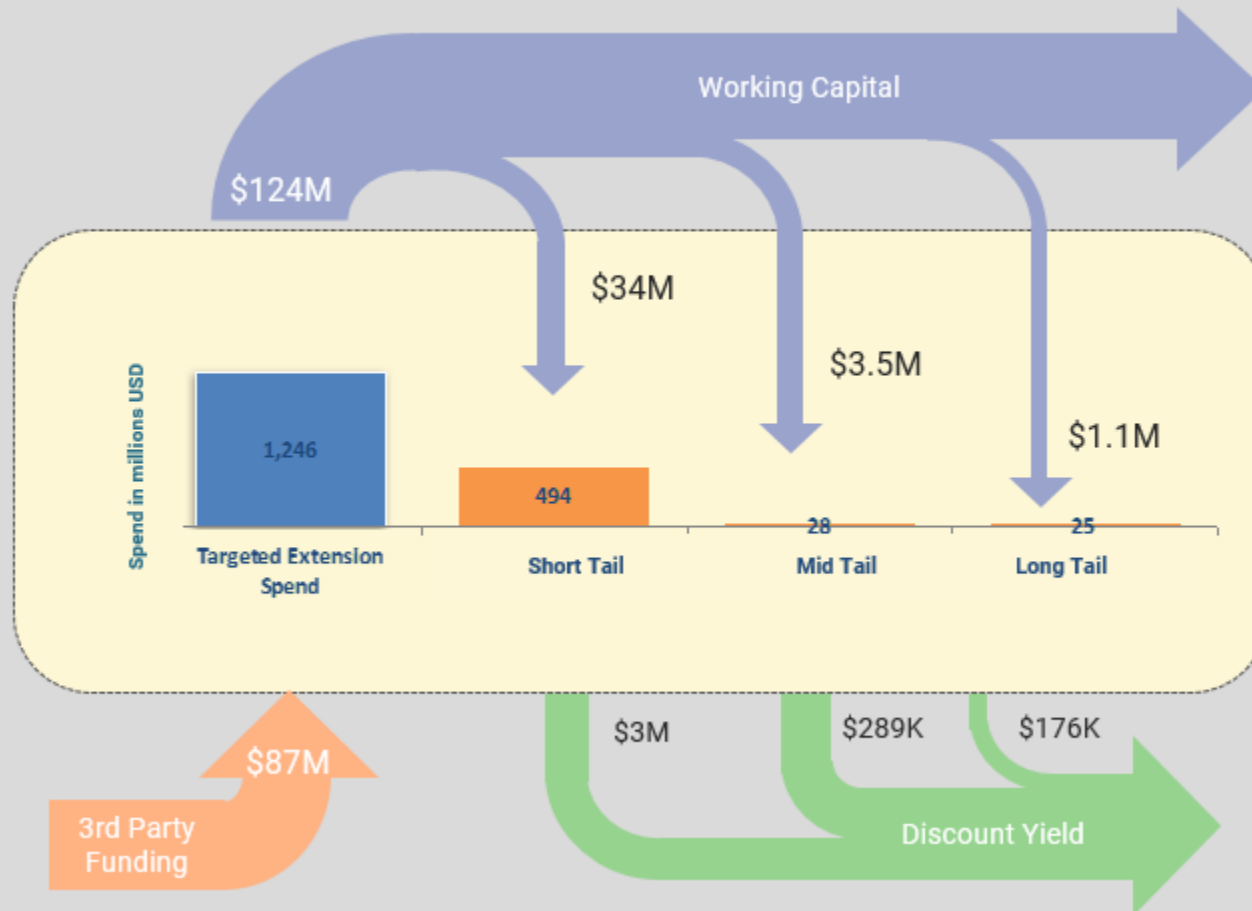
**+**

**\$0M**  
Cash Injected

# Case Study: Blended Program (Extension + SCF + DD)

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Your Supply Chain as an economic engine for your company



**Business Impact**

**\$86M**  
**Net Cash Unlocked**

**+**

**\$3.5M**  
**Discount Yield**

**+**

**\$87M**  
**Cash Injected**

# Final Thoughts

## Key Takeaways for Treasury:



1. As the owner of working capital, treasury plays a vital role in managing their organization's financial supply chain.
2. It commonly falls on treasury to implement new technologies and solutions to drive working capital efficiency & optimization.
3. AI powered working capital tools can shape cash flows across your entire supply chain.
4. AI can help you understand future impacts to your cash flows and the cash flows of your suppliers and customers.



***Crawl:*** Assisted AI



***Walk:*** Augmented AI



***Run:*** Automated AI

# Contact Information


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## Speaker Contacts

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