

Supply Chain 4.0/5.0 Series: Procurement in the Age of Disruption

IISE Coordinator



D. Scott Sink
IISE Performance Excellence and
Op Analytics Volunteer Lead
Facilitator/Member, CISE



MONDAY, OCT 21, 2024

REGISTER TODAY FOR:

PROCUREMENT IN THE AGE OF DISRUPTION
STRATEGIES FOR A RESILIENT SUPPLY CHAIN

*Join us for a
powerful
webinar session
that will ignite
innovation
and elevate your
operations to
new heights!*



PRESENTER:

THOMAS BEIL

CEO & FOUNDER



PERFECT PLANNER



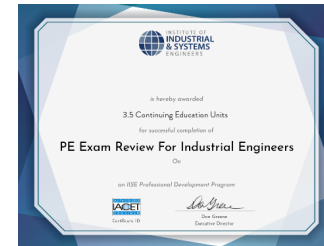
INSTITUTE OF
**INDUSTRIAL
& SYSTEMS**
ENGINEERS

21 Oct 2024



Housekeeping

- 1 Thank you for joining us!
- 2 We'll share how to get access to the recording, presentation several times throughout this webinar.
- 3 We will field questions as appropriate and time permits. Please **use the 'chat' function** to share your comments and questions.
- 4 Follow up questions are welcomed and contact information is provided at the end of the presentation.
- 5 For those who value **certificates of participation**, IISE will be mailing those out the week after the webinar. Be patient and check your clutter and spam folders if you don't receive one.
- 6 Let us know how we did, are doing. ssink@jumpcurves.com



IISE PERFORMANCE EXCELLENCE WEBINARS



Boost your career. Add knowledge to your ISE toolkit. Select from any (or all) of the IISE Performance Excellence Webinar tracks below to hone your skillset to its maximum and improve your organization.

Performance Excellence topics include ...



[Main Landing Page for all our Perf Exc Webinars](#)

150 Timely Webinars on a full spectrum of Performance Excellence topics with an Integrated Systems Engineering Perspective and Point of View.

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Clustered into packages of webinars to provide tailored **Certificate opportunities** for our Members.

1-Operational Excellence

2--Integrated LeanSigma

3--Operational Analytics

4--Change Leadership & Management

Strengthen your Resume
and LinkedIn Page!!

Industry and Service Systems 4.0

Explore the major “movements” and hear thought leaders in Industry 4.0, Healthcare 4.0, Supply Chain 4.0, Service Systems 4.0, more.

- Best Practice Case Study on Designing, Developing, and Deploying an Op Ex Program
- Healthcare Performance Excellence Series: Transformational Performance Improvement Innovations
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- Supply Chain Leadership Insights for the '20s
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- Smart Supply Chains and Industry 4.0
- The Impact of Industry 4.0 on Business Models ←
- The ISE Role in Service Systems Engineering Service 4.0 Overview, Digital Transformation in Healthcare and Industry
- Whetting your Appetite ("Aperitivo"): All you Need to Know about Industry 4.0

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Looking forward to today's sharing from Thomas and adding his to the top of this list for you.



PERFECT PLANNER

The background features a composite image of global logistics. On the left, a large blue container ship is loaded with colorful shipping containers. In the center, a white cargo plane is in flight. On the right, a warehouse scene shows stacks of containers and a red forklift. A semi-transparent world map is overlaid on the entire scene. A semi-transparent white banner at the bottom contains the title text.

**Procurement in the Age of Disruption:
*Strategies for a Resilient Supply Chain***

Agenda

 About the Speaker & Introduction

 Procurement Challenges

 A Path to Resilience

 Case Studies



Thomas Beil

CEO & Founder, Perfect Planner LLC

- Multi Award-Winning Supply Chain Leader
- Worked for F500 Companies Such as MAHLE, Honeywell, and Whirlpool
- Expertise in Lean Six Sigma, Supply Chain Management, Digital Transformation, and Advanced Analytics
- Honored with the **2024 CSCMP Business Innovation Award** and the **IISE Logistics and Supply Chain Division's Outstanding Industry Practitioner Award**
- IISE Operational Excellence Division Board Member, ASCM Atlanta Board Member, and **UGA Supply Chain Advisory Board Member**
- Adjunct Professor of Business Management and Business Analytics at Lee University



What is Procurement?

Procurement is the process of sourcing, purchasing, receiving, and inspecting all of the goods and services your business needs to operate.

- **Sourcing**
- **Purchasing/Buying**
- **Receiving**
- **Inspecting**
- **Strategic Planning**
- **Managing Suppliers**

Key Challenges in Modern Procurement

- Talent shortages and skill gaps in procurement roles
- Increasing complexity and the need for better data
- Uncertainty and volatility in global supply chains
- Technology misalignment

Financial Implications

\$800B

Inefficient supply chains will cost companies about \$800 billion unless manufacturers begin today to transform legacy supply chain operating models.¹



\$184MM

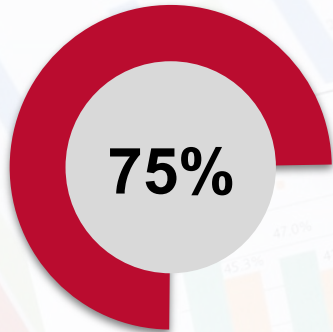
Average annual cost of supply chain disruptions for Fortune 500 companies.²

¹ "Estimated average annual cost to respondents' organizations as a result of global supply chain disruptions in 2021, by region or country," Statista, September 2022.

² "More than half of all CPG companies on track to grow below the market by 2027," Kearney, June 2022.

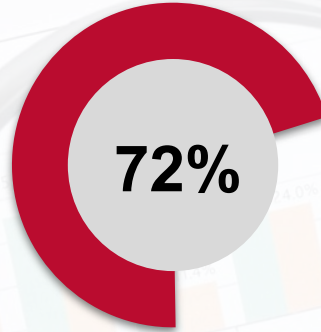
The Problem of 70's

Productivity



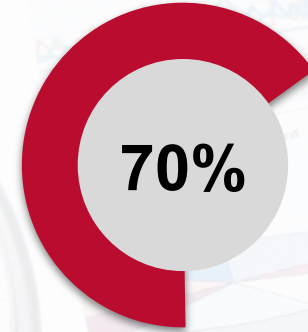
Of an Analyst's Day
is Spent on Non-
Value Added Work

Visibility



Of Disruptions Are
Developing More
Than 2 Weeks Out
into the Future

Data Insight



Of SKU-Related
Issues Have More
Than 1 Occurrence
in 12 Months

**Increased Capability Elevates
Resilience.**





The Intersection of Work Design & Digital Transformation: *The Path to Resilience*

Efficient Systems for Human Work

- **Task Analysis** - The sequence, complexity, and interdependencies of tasks.
- **Human Factors** - The physical and cognitive capabilities of employees.
- **Standard Work** - The optimal way tasks should be performed to ensure consistency and efficiency.
- **Process Improvement** - Continuous evaluation and redesign of processes.



**BoK Area:
WORK DESIGN**

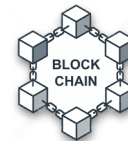
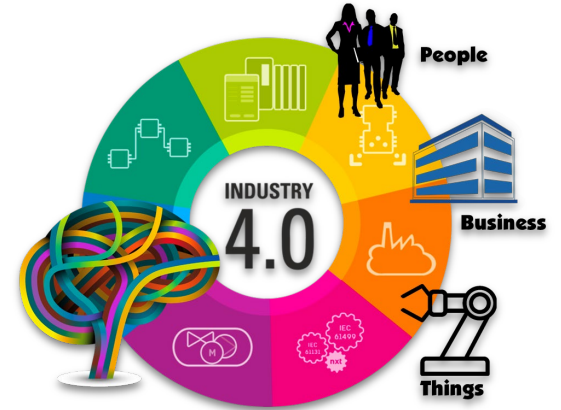
Good Processes = Good Results

- **Standardize Functions**—*Not Just Tasks*
- Standardizing Functions Enhances Supply Chain Resilience
- Analytical Functions Can Be Standardized Too!
- Process Before Technology



Digital Transformation Benefits

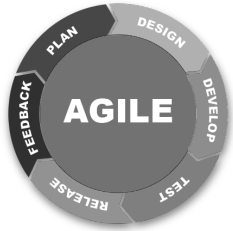
- Data Accuracy and Decision Making
- Efficiency and Productivity
- Collaboration and Transparency
- Scalability and Responsiveness
- Cost Reduction and ROI



Why Technology Often Fails Us

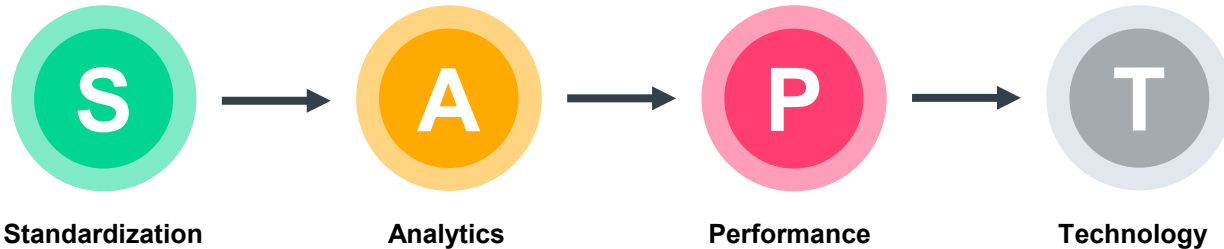
- **Process Misalignment:** Many solutions are not process-driven or fail to align with existing organizational workflows, leading to inefficiencies and incompatibility with established operations.
- **Limited:** Data consolidation solutions streamline data tasks but often falling short in providing deeper comprehension.
- **Inaccurate:** AI/ML Models enhance decision-making and problem-solving, but typically achieve accuracy rates of only 70% at best.

S.A.P.T. Approach



An AGILE Supply Chain Empowers Employees to Achieve Peak Efficiency.

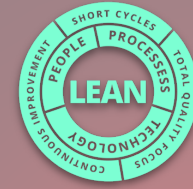
The Strategic Approach for Performance & Technology





Standardization:

- Comprehensive in Scope
- Tasks Prioritized by Criticality
- Function Normalized Across Teams
- Easy to Understand & Follow



Lean



Analytics:

- PURPOSE: Data-Driven Decision Making
- Create ALL the Analytics to Support the Process (Metrics, Alerts, RCA, & LA)



Six Sigma



Performance:

- Define the KPIs & Scorecards to Effectively Measure & Track Performance
- Align with TQM & Balanced Scorecard Principles

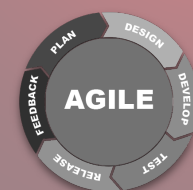


TQM



Technology:

- Leverage Advanced Technologies & Iterative Development
- Ensure Accuracy & Automate ALL Administrative & Analytical Tasks



Agile



The 3 C's of Work Prioritization

- Critical Items
- Cadenced Activities
(D/W/M/Q/Y)
- Continuous Improvement
& Risk Mitigation

Examples of Work Prioritization

Sourcing

- **Critical Items**
 - Issue Resolution
 - Contract Negotiation
 - Supplier Selection/Qualification
- **Cadenced Activities**
 - RFQ & Bid Management
 - Purchasing Follow-Up
 - Supplier Performance Monitoring
- **Continuous Improvement & Risk Mgmt**
 - Supplier Development/Innovation
 - Diversification & Contingency Planning
 - Sustainability Initiatives

Purchasing / Buying

- **Critical Items**
 - Issue Resolution
 - Locating Supply Shortages
 - Setting Up Expedites
- **Cadenced Activities**
 - Placing Orders
 - Monitoring OTD of Goods
 - Actioning PO Messages
- **Continuous Improvement & Risk Mgmt**
 - Safety Stock Analysis
 - Obsolescence Risk Monitoring
 - BOM Accuracy Review

Directing Employees for Success

- **Work Prioritization**
- **Direct Execution**
- **Increased Efficiency**
- **Adaptability**
- **Accountability and Tracking**



Case Study 1: Quality Sort Priority Tracker

Rank (Sort)	Part Number	Sort Company	Description	Vendor	Line Affected	Manual Date	In-Transit	Qty. Needed	QA Hold Inv.	Avail. Inv.	Day 1 Req.	Day 1 Ending	Day 2 Req.	Day 2 Ending
1.05	X10220990	Master Sort	8-18 X .375 MTR SC ABT SG	Supplier 1	10	10/22	0.00	6	1932	264	170	114	120	-6
3.86	X13394705	Inspect Help	ELEMENT SURFACE	Supplier 3	30	10/24	0.00	5	119	62	9	43	0	43
3.90	X11056402	Master Sort	6-32 X .875 RD SQ DP	Supplier 1	10	10/24	375.00	27	0	1241	367	954	494	450
4.07	X14193446	Inspect Help	ELEMENT GENERAL	Supplier 3	30	10/25	57,000.00	6232	0	31400	4092	26408	7344	19064
4.86	X14921474	Quality Source	ADHESIVE 858.5	Supplier 4	40	10/25	1,525.00	41	0	1951	390	1541	315	1228
5.69	X15693939	Quality Source	ADHESIVE 762.5	Supplier 4	40	10/27	0.00	110	0	2475	216	2259	466	1750
5.82	X14983892	Quality Source	ADHESIVE 493.7	Supplier 4	40	10/27	2,480.00	56	17	2342	405	1937	331	1608
5.84	X12197820	Master Sort	LABEL WARNING-ELC SHOCK HAZ	Supplier 2	20	10/27	0.00	21	455	618	161	457	120	337
5.90	X14932490	Quality Source	ADHESIVE LOCTITE 5650 PART A	Supplier 4	40	10/27	2,480.00	32	0	2366	405	1961	331	1620
	X10193453	Master Sort	8-32 X .195 HF LSER NUT	Supplier 1	10		3,848.00	0	2432	10238	241	9995	350	9645
	X10252975	Master Sort	10-32 X .289 MTR CR LR SEMB	Supplier 1	10		0.00	0	0	118	0	118	0	118
	X10426916	Master Sort	8-32 X .860 TR SC SEMS BLK	Supplier 1	10		0.00	0	0	432	0	432	0	432
	X10584391	Master Sort	8-32 X .124 HX ETLW NUT BLK	Supplier 1	10		0.00	0	2000	3347	252	3095	180	2915
	X10991036	Master Sort	8-18 X 1.125 PN BL AB	Supplier 1	10		0.00	0	0	1536	154	1392	133	1249
	X10933847	Master Sort	8-18 X 1.125 PN BL AB	Supplier 1	10		0.00	0	3400	10501	529	10002	540	9462
	X10973890	Master Sort	8-18 X .625 PN BL AB	Supplier 1	10		0.00	0	0	8529	137	8392	137	8255
	X11125362	Master Sort	10-32 X .690 MTR CR CONE F CA BLK	Supplier 1	10		125.00	0	0	401	1	400	0	400
	X11456612	Master Sort	8-18 X .170 MTR SC B LSER	Supplier 1	10		0.00	0	0	143	0	143	0	143
	X11507246	Master Sort	MB-1 X 14.96 LH AODRN NUT	Supplier 1	10		0.00	0	0	733	0	733	48	685
	X11552366	Master Sort	LABEL WIRING DIAGRAM	Supplier 2	10		0.00	0	0	603	24	579	48	531
	X11885156	Master Sort	LABEL CUSTOMER SERV	Supplier 2	20		0.00	0	10	2613	170	2443	120	2323
	X11761567	Master Sort	LABEL CAUTION BILINGUAL	Supplier 2	20		0.00	0	0	10166	0	10166	0	10166
	X11800665	Master Sort	LABEL CUSTOMER SERVICE	Supplier 2	20		0.00	0	0	16343	1856	14307	1836	12501
	X11806646	Master Sort	LABEL DANGER	Supplier 2	20		0.00	0	0	295	24	271	48	223
	X12011162	Master Sort	LABEL WARNING DISC	Supplier 2	20		0.00	0	0	1351	114	1217	158	1109
	X12240513	Inspect Help	LABEL WARNING SHOCK	Supplier 2	20		5,000.00	0	0	16000	470	15530	1228	14309
	X12275111	Inspect Help	LABEL MAP	Supplier 2	20		0.00	0	0	188	0	188	0	188
	X12849988	Inspect Help	LABEL WARNING 2	Supplier 2	20		0.00	0	0	142	0	142	0	142
	X12903863	Inspect Help	LABEL WARNING 33	Supplier 2	20		0.00	0	0	1268	48	1320	60	1160
	X13200478	Inspect Help	LABEL WARNING 12	Supplier 2	30		0.00	0	0	549	116	433	94	339

Case Study 2: Perfect Planner

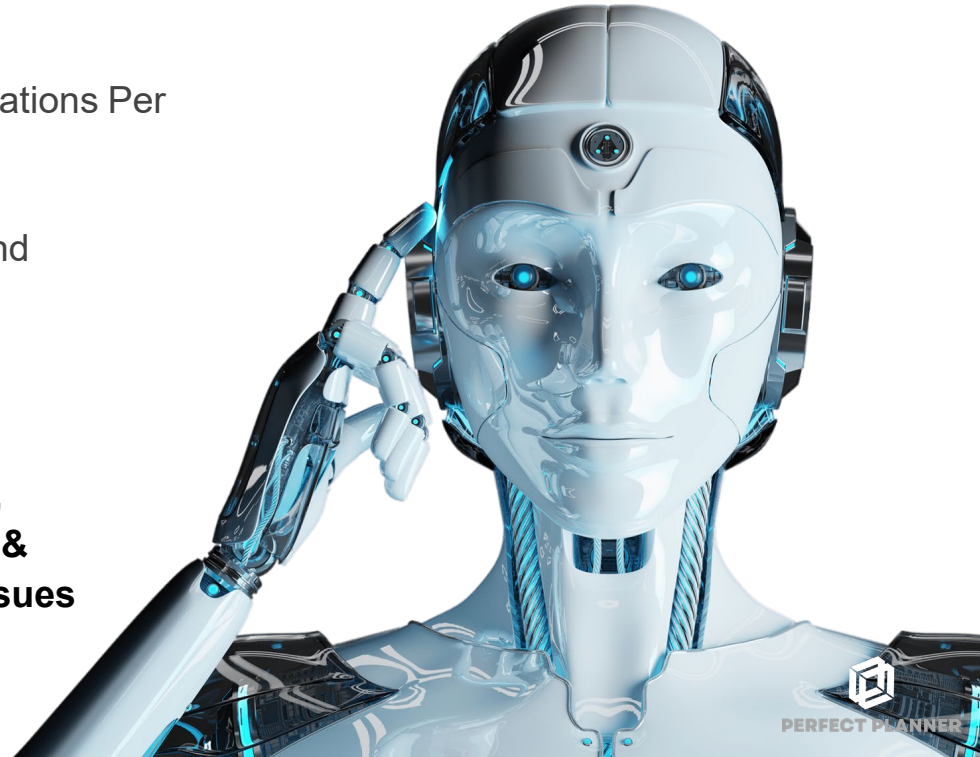
What Is Perfect Planner®? A cloud-based platform that standardizes and simplifies the material buying and replenishment process, while elevating existing MRP systems by managing the complex and time-consuming tasks.

- ✓ Simplify the buying process, making it accessible to virtually all employees to bridge the skill gap and talent shortage.
- ✓ Equip material buyers with a comprehensive weighted task list.
- ✓ Provide leaders with clear visibility into the performance, potential issues, and daily task completion of buying.



The Intelliplanning® Logic Engine

- **AI and Logic Engine for Buying**
- Performs All the Analysis: Over 2,000 Calculations Per SKU Per Day
- Understands the Nuances Between SKUs and Replenishment Strategies
- Calculates at 99.9+% Accuracy
- **Eliminates Human Error, Report Running, Spreadsheet Analysis, Missed Shortages & Opportunities, and Many Data Integrity Issues**



Planner x +

app.perfectplanner.io/planner

PERFECT PLANNER PERFORMANCE **PLANNER** PART DETAILS EXPORT ADMIN UTK Heatin... Jason Miller

APPLY FILTERS

Site: All Priority: All Planner: All Vendor: All

Show Completed YES

RANK	PRIORITY	PART NUMBER	SHORTAGE PROJECTION	ROOT CAUSE ANALYSIS	ORDER MANAGEMENT	LEAN ANALYSIS	STATUS
1	A	X14983892	Shortage Date 10/17/24 Shortage Qty -1077 Within Supplier LT Yes Impact Duration (Days) 2 Last Impact Date 10/18/24 Worst Position Qty -2440 RECOMMENDATION In-transit quantity is needed to resolve the deficit. Below Safety Date 10/16/24 Below Safety % 68.35% Within Supplier LT Yes Cons Shortage Date 10/17/24 Cons Shortage Qty -1402 Cons Within Supplier LT Yes Cons Impact Duration (Days) 2 Cons Last Impact Date 10/18/24 Cons Worst Position Qty -2864 Cons Below Safety Date 10/16/24 Cons Below Safety % 93.67% Cons Within Supplier LT Yes	Prev Day Priority D Past Due Order 3000 Past Due ASN Qty 3000 Floor Inv 70% Safety Inv Adj 249% \$5680 (SS: 3304)	Previous Day Delivery Qty 1000 Past Due Order Qty 3000 Past Due ASN Qty 3000 Next Order Delivery 10/18/24 42500	Short Total Reqs Var -3% (19535 / 20180) Short Dep Reqs Var -3% (19535 / 20180)	COMPLETED <input type="button" value="REOPEN"/>
2	A	X14952490	Shortage Date 10/17/24 Shortage Qty -73 Within Supplier LT Yes Impact Duration (Days) 2 Last Impact Date 10/18/24 Worst Position Qty -1599 RECOMMENDATION Future scheduled orders are needed to resolve the deficit. Cons Shortage Date 10/17/24 Cons Shortage Qty -248 Cons Within Supplier LT Yes Cons Impact Duration (Days) 2	Prev Day Priority C Floor Inv 68% Prev Day Reqs VS Cons Var 17% (1511 / 1764) Safety Inv Adj 301% \$11213 (SS: 3983)	Next Order Delivery 10/18/24 46000	Short Total Reqs Var -5% (21674 / 22888) Short Dep Reqs Var -5% (21674 / 22888)	OPEN <input type="button" value="COMPLETE"/>

Manual Planning VS. Perfect Planner

50

Part Numbers

7+

Years of
Planning
Experience

The Data Analysis Test*:

- **Pinpoint Shortages** (With As Much Visibility as Possible)
- **Is a Part New, Phasing In, or Phasing Out?**
- **Perform RCA on the Projected Shortages**
- **Calculate Demand & Consumption Variance**
- **Calculate ALL Inventory Metrics**
- **Locate Savings** (Safety Stock Adjustment, MOQ Reductions, Supplier Overshipments, & Obsolescence Elimination)

*Perfect Planner Time Study 2024



Manual Planning VS. Perfect Planner

	Analysis Time Required	Weeks of Visibility	Shortages Pinpointed	Savings Located	Overall Accuracy
Senior Planner	7.7 hrs	4	11	\$89k	88.4%
Perfect Planner	< 1 s	26	21	\$154k	99.9%



Manual Planning VS. Perfect Planner

Senior Planner*:

\$296.15

*Based on an \$80,000 annual planner salary

Perfect Planner:

\$1.67

The background features a collage of transportation and logistics-related elements. At the top, a world map is visible. Below it, a city skyline with various skyscrapers is shown. An airplane is depicted in flight. In the foreground, there are several shipping containers, a semi-truck, and a large cargo ship. The entire scene is rendered in a light, semi-transparent style.

THANK YOU!

S.A.P.T. Use Cases Needed!



Leading Transformational Change

Register Now!!!

Upcoming Offerings for you.

30 Oct—ReGlobalization: Aligning Western Hemisphere Supply Chains to Address the mandates of nearshoring, reshoring, and friendshoring

REGISTER: [Jim Tompkins on ReGlobalization and Supply Chain Adjustment Requirements](#)

In the Works

CISE Sharings: IISE & CISE sharing cutting edge learnings from our Fall Leadership Benchmarking Meeting in Washington, DC.

Deloitte on AI: Best Strategies for a Successful Migration Confirmed, date to be determined

17 Jan, 11-12 am Eastern

World Wide Technologies: Model Based Enterprise





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Council on Industrial & Systems Engineering

Exec Overview

Oct 2024



*Thought Leadership for
IIESE*



MTDG
MANUFACTURING TECHNOLOGY
DEPLOYMENT GROUP, INC.



ANNUAL

CONFERENCE & EXPO 2025

May 31 – June 3, 2025

Renaissance Atlanta Waverly Hotel & Convention Center
Cobb Galleria Centre | Atlanta, Georgia

#IIESEAnnual2025

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Thank You!

Contact us for More Info:

For *more information* on how IISE can play a role with your ILSS training needs:

James Swisher: jswisher@iise.org

For *questions* about our IISE Webinar Series, our Operational Excellence and Analytics Training and Certification Program, or the Council on Integrated/Industrial Systems Engineering

Scott Sink: ssink@jumpcurves.com