



Post Pandemic Procurement Update, Strategy, Tactics and Tools



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***Engineering and business solutions to improve performance,
profitability, and teamwork***

Agenda

Post Pandemic Procurement-
Update, Strategy, Tactics and Tools

- Introduction
 - Risk Assessment and Management
 - Supplier Qualification, Performance and Partnering
 - Purchasing
-

Introduction- Reshoring

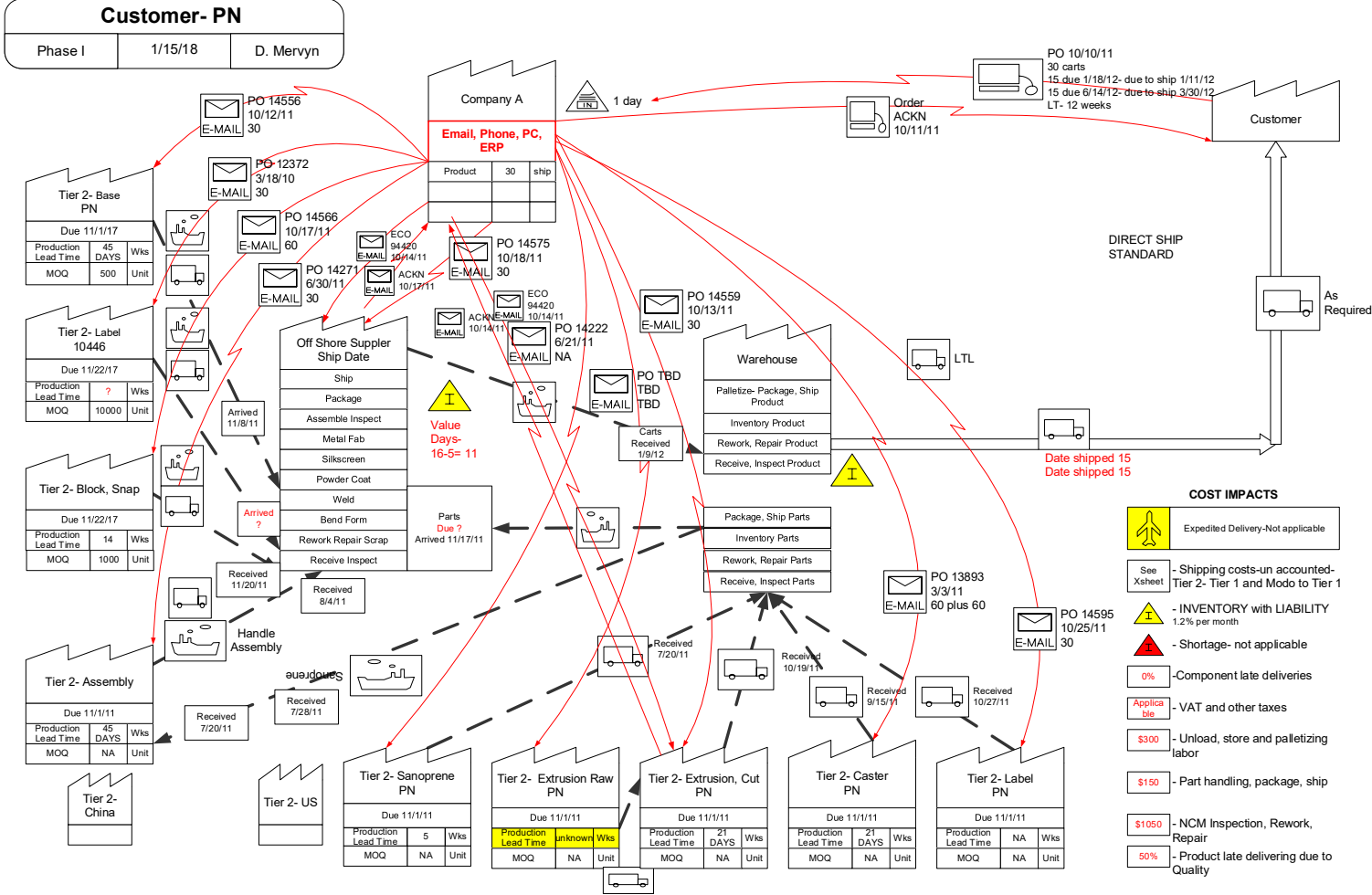
Once Made in China: Jobs Trickle Back to U.S. Plants- WSJ 2012

By [JAMES R. HAGERTY](#)



“For Whirlpool, the decision to assemble hand mixers in the US was based on complicated calculations that varies for every manufacturer contemplating reshoring: the amount of money it saves on shipping and inventory, for example, off sets the higher wages it pays American workers. It also was able to use an existing US factory and further automate its assembly line.”

Value Stream Costing, Risk and Management



Post Pandemic- Update

Impacts

- All market sectors

Lead times

- Half 2021 but double pre pandemic
- Up to 2 or more years out

Components and Finished Good vs. Raw Materials

- Gases and minerals- Ukraine
 - <https://www.businesstoday.in/latest/world/story/are-ukraines-vast-natural-resources-a-real-reason-behind-russias-invasion-323894-2022-02-2>
 - Silica
 - https://en.wikipedia.org/wiki/List_of_countries_by_silicon_production
 - <https://www.statista.com/statistics/268108/world-silicon-production-by-country/>
-

Post Pandemic- Update

Rank ↕	Country/Region ↕	Silicon production (thousands of tons per year) ↕
—	<i>World</i>	8,500
1	 China	6,000
2	 Russia	580
3	 Brazil	390
4	 Norway	350
5	 United States	310
6	 France	120
7	 Iceland	110
8	 Malaysia	80
9	 Bhutan	70
10	 Kazakhstan	67
11	 India	60
12	 Spain	58
13	 Canada	50
14	 Ukraine	49
15	 Australia	42
15	 Poland	42
	Other Countries	160



Risk Assessment and Management

ISO31010- International Standard for Risk Management

Risk- Hazards Analysis- Identify the hazard or hazardous situation and events for a certain activity, facility or system and its impact. Rank Hazard based on probability of occurrence and impact.

Probability – Likelihood this risk will happen or has happened in the past.

- **High – Happens frequently.**
- **Medium – It is 50/50 whether this will happen.**
- **Low – This will be unlikely to happen, but is possible.**

Impact – Either financial, delivery or quality will be impacted if this risk happens.

- **High – Impact may be stop production or cause impacts to quality and delivery.**
- **Medium – Impact may be significant enough to require change or adjust the schedule or other production factor.**
- **Low – Impact is small and can be accommodated by minor production change.**

Severity	H	LH	MH	HH
	M	LM	MM	HM
	L	LL	ML	HL
		L	M	H
	Probability			

Risk Assessment Examples

Assessment with action plan- Cross functional Team

Purchase/ Receive Risk	Probability	Severity	Action
Supplier Quality and or Delivery	L	H	Company is partnering with its EMS supplier to address, minimize risk and manage PCBA production and delivery. Company has developed multiple sources for materials.
Nonconforming material and components	L	H	Company implemented Supplier Qualification and Selection procedure as well as incoming inspection procedure to minimize risk of NCM.
Incorrect or incomplete Released Product Files.	M	H	Release to Production process and procedure will be augmented and revised in 2023.
Employees bypass procurement process	M	H	New Supplier Qualification and Purchasing procedures were implemented and employees trained.

Risk Assessment China Contingency

“Many of the most respected board members in corporate America and Europe are demanding a China contingency plan from their CEOs because they realize that a China risk mitigation plan is not a drill.”

Keith Krach-

Chairman and Co-Founder, Krach Institute for Tech Diplomacy at Purdue;
former U.S. Under Secretary of State; 2022 Nobel Peace Prize Nominee

https://www.linkedin.com/posts/keithkrach_business-china-russia-ugcPost-7034945876494082050-HORy?utm_source=share&utm_medium=member_desktop

Supplier Qualification and Management

1. Establish Tiers and develop requirements
 2. Conduct risk assessment
 3. Qualify Suppliers and create Approved Supplier List
 4. Measure Supplier performance
 5. Establish partnerships or conduct business reviews with critical Suppliers
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Suppliers- Establish Tiers and Requirements

1. Establish Tiers- Example

Tier 1:

Manufacture, assemble and package final products ready for customer delivery or responsible for final inspection, release and delivery of assembled product.

Tier 2:

Manufacture custom-ordered components or processes to Tier 1 Suppliers for final product assembly. Examples of processes include painting, anodizing, and pad printing.

Suppliers of “off-the-shelf” components that critically impact quality and cart function including casters, slides, power strips and arms.

Laboratories, consultants, and outside service organizations whose work may impact quality.

Tier 3:

Suppliers of “off-the-shelf” components to Tier 1 or Tier 2 Suppliers for final product assembly, packaging and delivery services. These components are generally standard catalog items available from the manufacturer or distributor.

Suppliers- Establish Tiers and Requirements

1. Develop requirements- Example- Mike Schindele- Axiom

Supplier Qualification Matrix													
Qualification Class	Quality Management System	Supplier Technical Capabilities Reviewed	Non-Disclosure Agreement (NDA)	Quality Codes/Flowdowns Accepted AWI000072	Quality &/or Special Requirements Accepted	Qualification (AS9102 FAI) Evaluation	Financial Review	Supplier Survey AFM000009	Reference Check	Supplier Agreement or Contract (SOW)	Certificate of Insurance	Technical & Quality On-Site Validation	Target Re-Evaluation Period
Printed Circuits Board (PCB) Mfr's	R ⁽³⁾	R	R	R	R ⁽¹¹⁾	R	O	R	O	O	O	O	3 Years or Upon adverse event
Manufacturer Custom items (made to Print)	R	R	R	R	R ⁽¹¹⁾		O	R	O	O	O	O	3 Years or Upon adverse event
Manufacturer OCM (Original Component Manufacturer)	R	R	R	R	R ⁽¹¹⁾		O	R	O	O	O	O	3 Years or Upon adverse event
Manufacturer OEM (Original Equipment Manufacturer)	R	R	R	R	R ⁽¹¹⁾		O	R	O	O	O	O	3 Years or Upon adverse event
Customer Approved Supplier (All/Any)	R ⁽³⁾	V	R	R	R ⁽¹¹⁾	V	V	V	V	O	O	V	3 Years or Upon adverse event
Contract Services	R	R	R	R	O	O	O	O	O	O	O	O	Annually or Upon adverse event
Calibration Services	R ⁽⁷⁾	R	R	N	O	N	O	O	O	O	O	O	Annually or Upon adverse event
Equipment Services	R	R	R	N	O	N	O	O	O	O	O	O	Annually or Upon adverse event
Laboratory Services	R	R	R	R	O	N	O	O	O	O	O	O	Annually or Upon adverse event
Service Providers	R ⁽⁴⁾	R	O	O	O	N	O	O	O	O	O	O	Annually or Upon adverse event
MRO Suppliers	R	N	O	O	O	O	O	O	O	O	N	N	Annually or Upon adverse event
Component-Authorized Distributors	R ⁽¹⁾	N	O	O	R	O	O	O	O	O	N	N	Annually or Upon adverse event
Component-Independent Distributors	R ^(2, 8, 9, 10)	N	O	O	R	O	O	O	O	O	R ⁽⁶⁾	N	Annually or Upon adverse event
Required Record:	Current Certification document	Via RFQ	Signed NDA	Flowdown acceptance	Acceptance or Other	First Article Acceptance Form	Financial report which meets current Requirements	Completed Supplier Survey	N/A	Signed Agreement / Contract (SOW)	Current Certificate	Trip Report	Score card, PBR Record, SCAR (as required)

- R = Required
- V= Validated with Customer
- O = Optional
- N = Not Required

Suppliers- Establish Tiers and Requirements

1. Develop requirements- Example- Mike Schindele- Axiom

Qualification Status	Definition	Restrictions
Approved	Supplier is fully approved for purchase of their commodity or service. Supplier meets the qualification criteria for the period of qualification	None.
Suspended	Supplier does not have the required paperwork. SyteLine prevents the buyer from purchasing from supplier if suspended.	See
Disqualified	Supplier is not Approved for purchases due to quality or on-time delivery performance. Irreconcilable issues identified. Requires best efforts to resolve the dispute.	PO cannot be issued or saved for Disqualified suppliers. Full supplier qualification & reconciliation of the issue must be agreed by the Supply Chain and Quality Managers in order to change status from disapproved.
Inactive	Supplier at one time was approved but is no longer active.	PO cannot be issued or saved for inactive suppliers. Supplier qualification data must be refreshed or reviewed to re-activate (Approve) supplier.

Supplier- Risk Assessment

2. Conduct Risk Assessment

- Hazards Analysis
- Informal based on experience
 - The Good, Bad, and Ugly Case Example
 - New Owner
 - Inherited Suppliers
 - No Purchase Order Requirements



Supplier- Qualification and ASL/ AVL

3. Qualify Suppliers and Create Approved Supplier List

- Supplier Self Survey- documented
 - Financial
 - Business, quality system, process controls questions
 - Your Research and Due Diligence- Example
 - Approved Supplier/ Vendor List
 - Approved
 - Provisional
 - Probation
 - Disqualified
-

Supplier- Qualification and ASL/ AVL

3. Qualify Suppliers and Create Approved Supplier List

- Research and Due Diligence
 - Documented
 - Justified
 - Approved

ASSESSMENT CRITERIA

Self Survey review

Capability to meet specifications

ISO Certification

History with similar products

Previous experience

Experience with Customers or Suppliers

Sample evaluations and test

Logistical conditions

Production capability and capacity

Geographical considerations

Financial stability

Pricing

Supplier- Performance- Feedback

4. Track Performance- OTD, Quality, Customer Service

- Purchase Order Requirements and Ts &Cs
- Performance On time delivery, Quality and Customer Service

Q4-2022		Quality Performance	Delivery Rating	Customer Service	Overall Rating	Performance Classification
Suppliers						
Tier One	Fabricator and Assembler 1	78%	98%	92%	88%	SATISFACTORY
	Fabricator and Assembler 2	100%	100%	97%	100%	PREFERRED
	Fabricator and Assembler 1- China	100%	100%	97%	100%	PREFERRED
	Fabricator and Assembler 3	81%	96%	96%	89%	SATISFACTORY
	Fabricator and Assembler 2- China	N/A	N/A	N/A	N/A	NOT APPLICABLE
	Fabricator and Assembler 4	97%	100%	96%	98%	PREFERRED
	Fabricator and Assembler 5	100%	100%	97%	100%	PREFERRED
	Overall	91%	99%	95%	95%	GOOD

Supplier- Performance- On Time Delivery

4523

(50 = no change)



U.S. manufacturing Supplier Deliveries Index January 2023

Published by [Statista Research Department](#), Feb 2, 2023

<https://www.statista.com/statistics/1261580/manufacturing-supplier-deliveries-index-united-states/>

Supplier- Partnering or Business Reviews

5. Establish partnerships or conduct business reviews with critical Suppliers

- *Business Reviews- Axiom*
- *Client Supplier Partnering relationships- The Mervyn Group*

“Company and Supplier help each other by equilibrating and reaching a point of consistency and predictability, despite the current challenges of resources and supply chain and logistics.” See agenda and action items.

“Strategic supplier partnership is “an arrangement between two companies or organizations to help each other or work together, to make it easier for each of them to achieve the things they want to achieve.”

<https://enable.com/blog/the-role-of-strategic-supplier-partnerships-in-the-supply-chain>

Post Pandemic Procurement

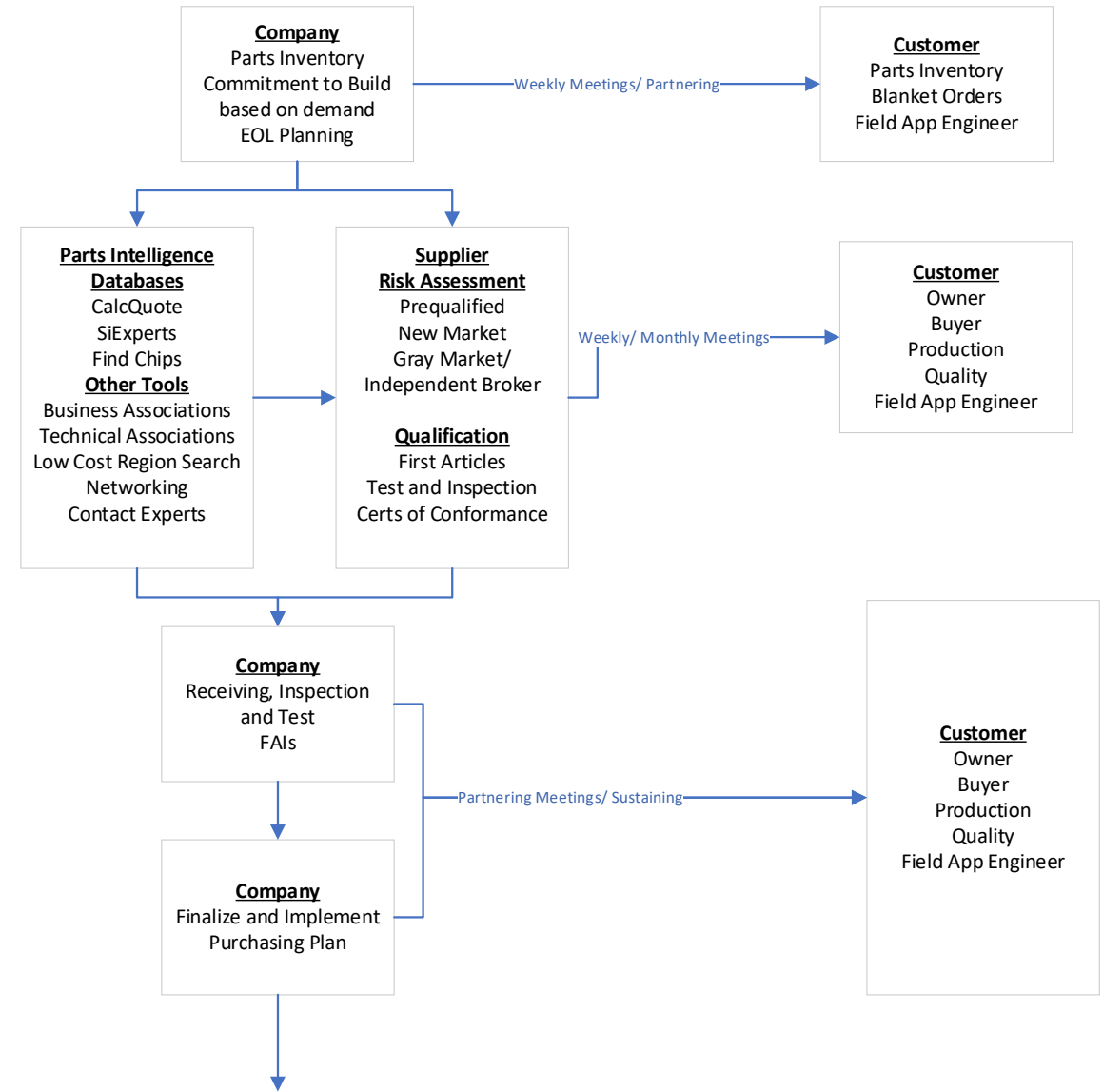
[F-16 pilot dies? Due to a counterfeit part?](#)

By [Mervyn Group](#) | January 9th, 2023 | [Supply Chain Strategies](#)
<https://www.mervyngroup.com/supply-chain-strategies/>

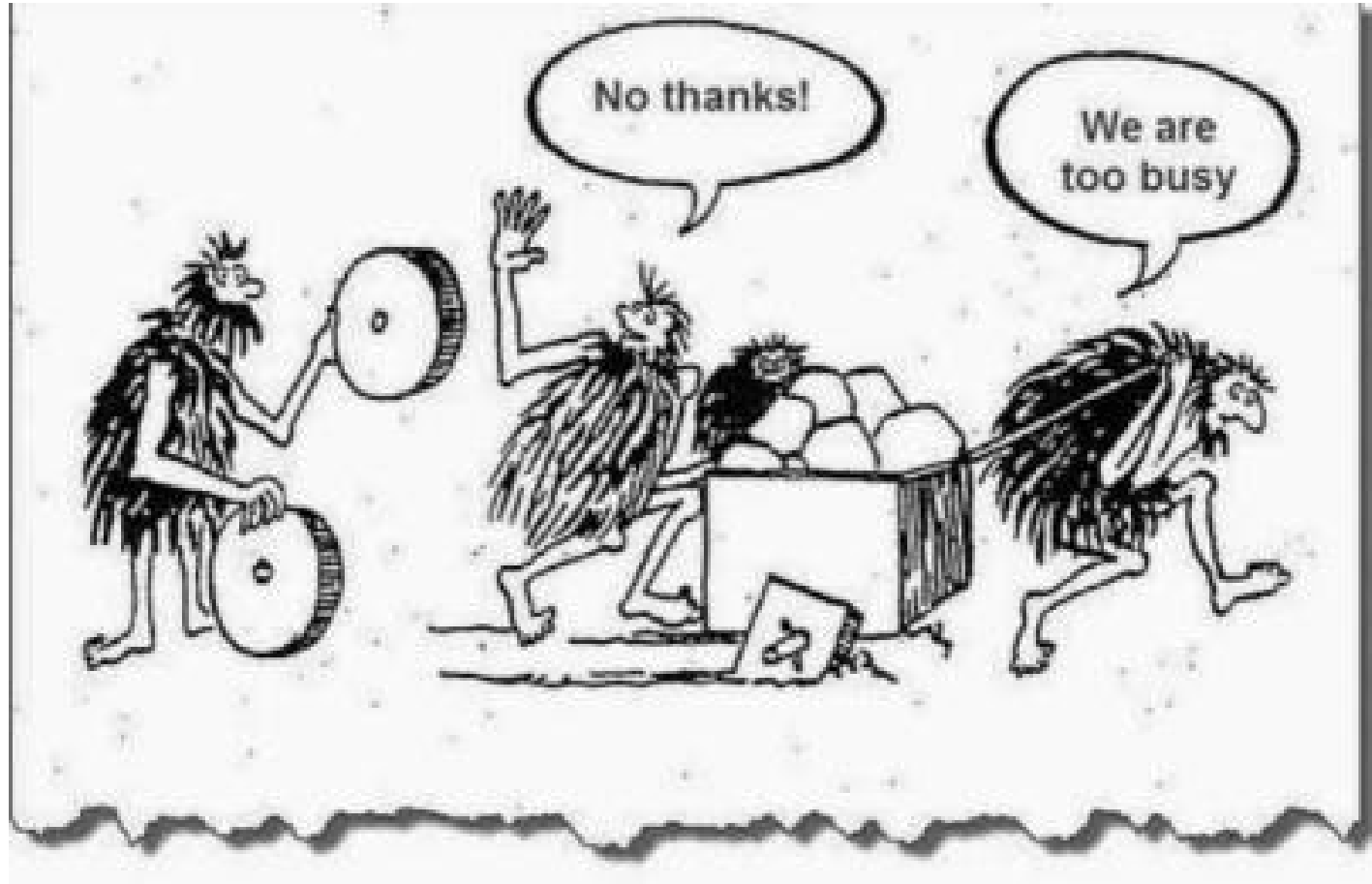
[“An Air Force investigation of a fatal fighter jet crash in 2020 quietly discovered that key components of the pilot’s ejection seat may have been counterfeit, Air Force Times has learned.”](#)

Did lack of supply chain planning drive poor decision-making?
How are these risks being addressed post Covid, or are they?

Post Pandemic Procurement



But we are too busy... “Faster” Faster



Planning

Franklin, Benjamin- American Scientist Publisher Diplomat-Serial Entrepreneur and Engineer

“One man of tolerable abilities may work great changes, and accomplish great affairs among mankind, if he first forms a good plan, and, cutting off all amusements or other employments... make the execution of that same plan his sole study and business.”

