



Quality Control 101

July 14, 2020



Presenters



David Alexander

Founder & President,
Baysource Global



Dory Lanenter

Sr. Quality Control
Manager, QIMA

Outline

- > Sourcing the Right Supplier
- > Risk Analysis
- > Setting KPI Goals and Expectations
- > QC 101
- > Free Resources



Industries

Automotive

**Commercial &
Home Appliance**

**Construction
Equipment**

**Fitness
Equipment**

**Food &
Beverage**

**Tools &
Hardware**

HVAC

**Lawn &
Garden**

Marine

**Medical
Device**

**Industrial
Machinery**

**Recreation
& Sport**

**Educational
Toys**

**Water
Treatment**

Steel

China's Manufacturing Landscape



Major Industrial Provinces

North

Shandong
Hebei
Beijing
Tianjin
Inner Mongolia
Liaoning
Jilin
Heilongjiang

South

Guangdong
Guangxi
Guizhou
Hunan
Jiangxi

Central

Hubei
Henan
Shanxi

East

Shanghai
Zhejiang
Jiangsu
Fujian
Anhui

West

Chongqing
Sichuan
Shaanxi
Gansu
Ningxia
Qinghai
Yunnan
Tibet
Xinjiang



Proper Sourcing Program Workflow

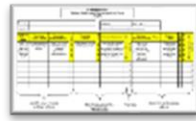
PHASE 1



Kick-off Checklist



Customer Key Criteria



DFMEA Meeting Report



Desktop Research Summary



RFIs



RFI Summary



Phase 1 Summary

PHASE 2



NDAs



Initial Visit Reports

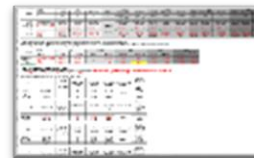


Phase 2 Summary

PHASE 3



RFQ/
RFPs

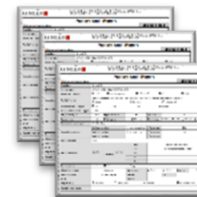


Quote Comparison Workbook

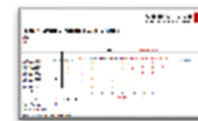


Phase 3 Summary

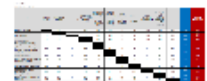
PHASE 4



Factory Audit Reports



Simple Comparison Matrix & Ranking



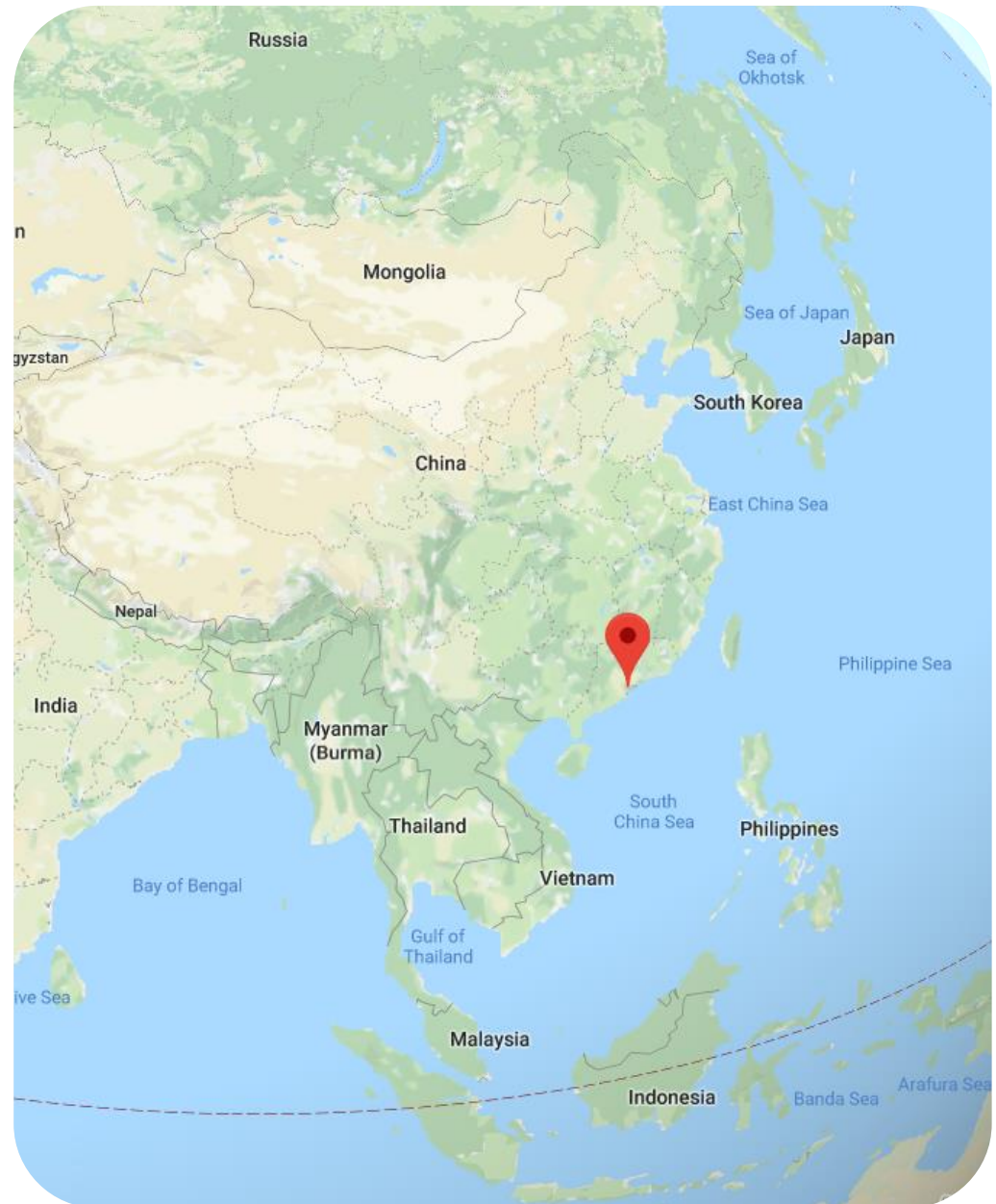
Comprehensive Comparison Matrix & Ranking



Phase 4 Summary

Strategic Priorities

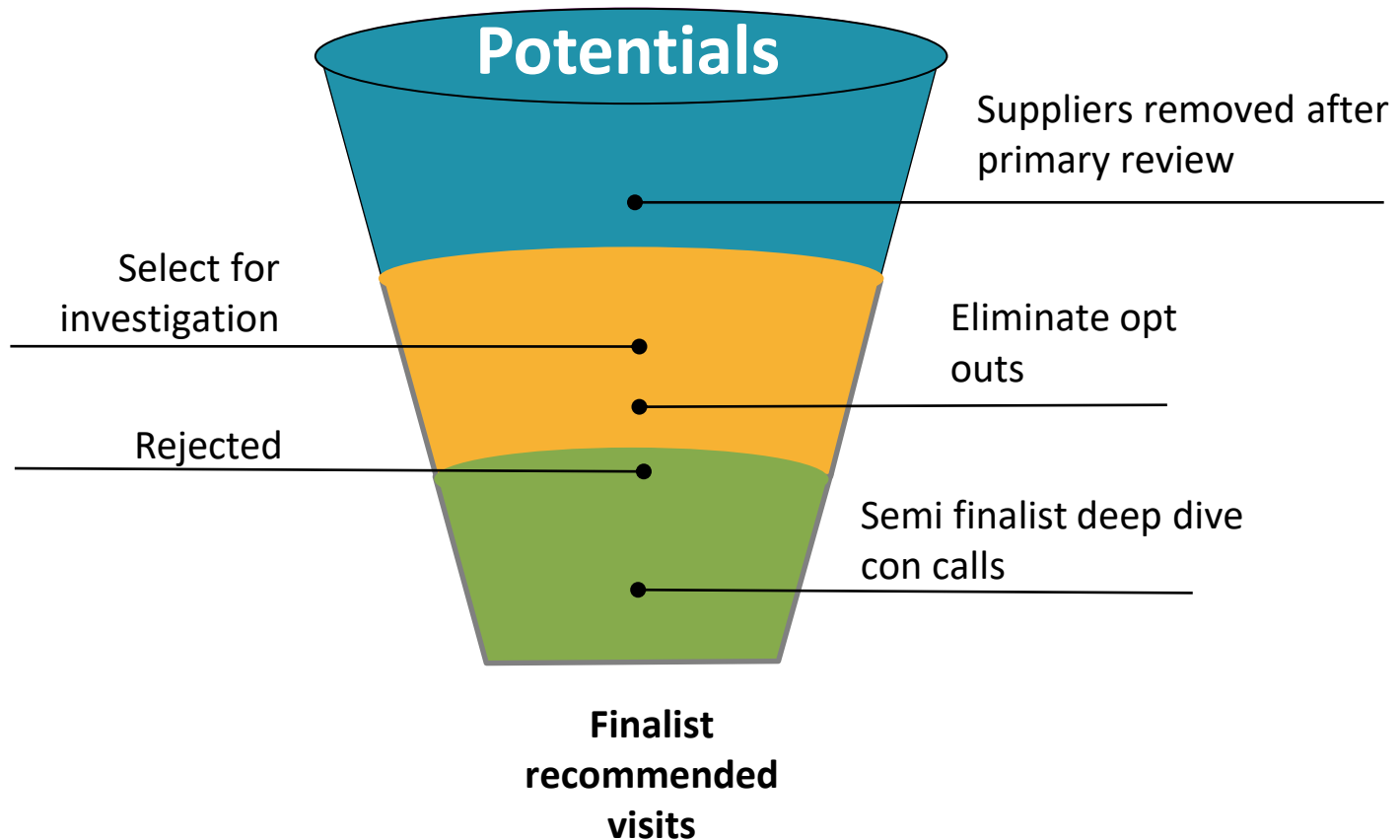
- > Find a good partner to grow and develop the business
- > Scale up
- > Diversify
- > Reduce risk
- > Mitigate tariffs



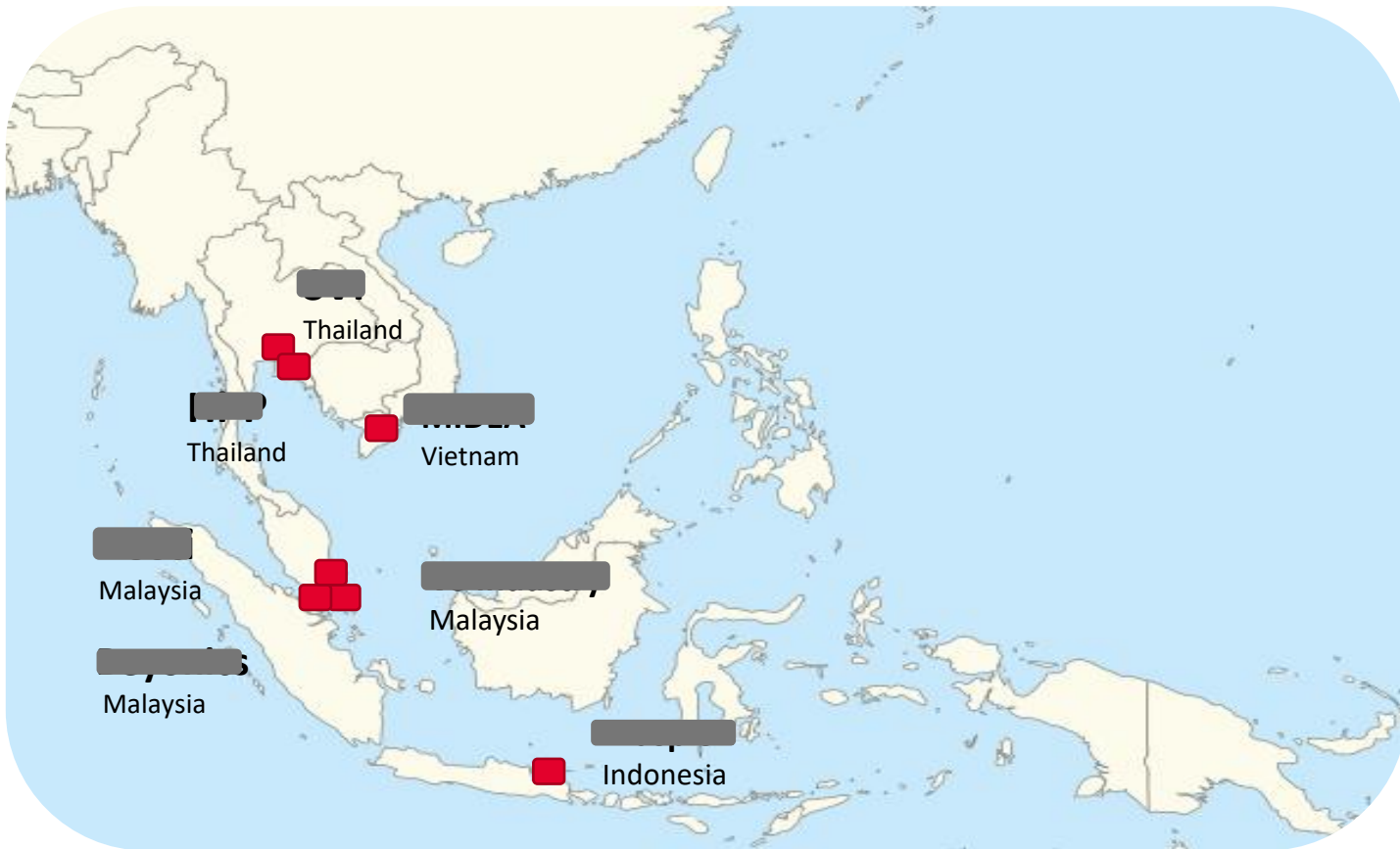
Sourcing Research – RFP

[illegible]

1. Review required and preferred requirements
2. Prepare search criteria
3. Perform desktop research
4. China industry associations
5. Conduct phone interviews
6. Screen dozens of candidates:
 - Management interest?
 - Technical fit?
 - Reputation?
 - Solvency?
 - Quality procedures?
 - Etc.



Target Map



Initial Visit Criteria

	Required							Preferred				
	Household appliances	Automation	Vermeer i-Tools, d-Tools, S-Series, packaging	Assembly	Accessories	Tools	Software	Flow	Material shop	Modeling	Process	IS
CM												
V...	x	x	x	x	x	x	x	x	x	x	x	x
R...	x	x	x	x	x	x	x	x	no	x	no	x
H...	x	x	x	x	x	x	x	x	no	x	no	x
S...	x	x	x	x	x	x	some	x	x	x	x	x
B...	no	x	x	x	x	x	some	no	x	x	x	x
M...	x	x	x	x	x	x	x	no	x	x	x	x
M...	x	no	x	x	x	x	some	x	x	x	no	x

Recommend Eliminating from Consideration



Lack applicable plastic injection molding experience, final assembly, and box build capabilities.



Although they have capability across multiple core processes, they have no experience for leveraging all processes in one project.



Focuses on large white goods. Core competencies not applicable.



Unsuitable for core product range but may have potential for flatware, glassware, and other accessories.

Rank	Score	CM
1	94%	
2	88%	
3	81%	
4	75%	
5	67%	
6	41%	
7	32%	

Recommendations



1

Maximize competitive negotiating position by including three companies in the next phase.

2

Combine onsite manufacturing/quality audits with the RFQ phase to save time and enable onsite verification of the quality, and accuracy of RFQ responses.

3

Collect insight and maximize investment in the CM sourcing process. Each company has different strengths. Encourage feedback on design, material, and/or functionality – to take out cost. Gain value-add input whether we award the business to a particular supplier...or not.



Scoring

[illegible]

4 Independent Scores

- > 2 Client Leaders
- > 2 CMD Leaders

5 Categories, 60 Criteria


1. Quality management
2. Quality inspection
3. Manufacturing capability
4. Warehousing, movement
5. R&D, cost management




#1 V.S.

Pros

- > Large EMS provider.
- > Deep experience with global brands.
- > Locally concentrated in one site.
- > Long history with target applications.
- > Product design launch capability with 50 R&D staffers.
- > Solid NPI to launch new products.
- > Multiple manufacturing capabilities:
 - > Tooling design and fabrication: 80 units/month
 - > Plastic molding: 1500 units machines worldwide
 - > Plastic finish: 12 spray spindle line, laser marking
 - > SMT and PBCA: 40 SMT lines, 750 mil point/month
 - > Automated processes for wire harnesses
 - > High-precision metal stamping
 - > Chemical etching for stainless steel filters
 - > Woven and non-woven filter assembly
 - > Strong Complex box build capability

Cons

- > Large company.
- > Bedford would be a small  of total business.
- > Risk of responsiveness suffering and falling in priority below this factory's other major clients.

Rank	Score	CM
1	94%	
2	88%	
3	81%	

QA/QC



Perform QA/QC as required:

- Incoming Quality Control (IQC)
- In Process Quality Control (IPQC)
- Outgoing Quality Control (OQC)
- Initial Sample Inspection Reports (ISIR)
- First Article Inspection Report (FAI)

Other reports & audits as required:

- ISO 9001 and/or ISO/IATF 16949
- ISO 14001
- Production Part Approval Process (PPAP)
- Failure Mode Effect Analysis (FMEA)
- Advanced Product Quality Planning (APQP)
- Statistical Process Control (SPC)
- Measurement System Analysis (MSA)
- Root Cause Analysis
- Environmental Audits
- Social Responsibility Audits
- Health & Safety Audits



Prototypes, Sampling



- > Tool/mold build (or relocation) supervision
- > First article inspections
- > Tool status reports
- > First article inspection reports
- > Review part variances with factory
- > Sample payment facilitation
- > Sample shipment consolidation



Supply Chain Management



Manage the supply chain

- > Ongoing placement of purchase orders, monitoring production and assuring that supplier meets delivery times
- > Outsource inspections to certified labs when required
- > Monitor quality; provide reports, videos, photographs
- > Supervise loading for on time delivery
- > Coordinate exports
- > Handle freight forwarder and customs documentation
- > Follow up on the completion of orders



Develop / Optimize Suppliers

- > Root Cause/Corrective Action Implementation
- > Lean
- > Production Flow Optimization
- > Automation
- > Advanced Planning, Scheduling
- > Resource Management
- > Inventory, Capacity Optimization
- > IP/Risk Management
- > Sustainability
- > KPIs, Dashboards



2020-21 Course

- Continued tariff uncertainty
- Chinese export declines
- SE Asia shift is happening



CMD Facility Screening,
Thailand, 2019

Risk Analysis and Making a Quality Plan

- Understanding your product
- Understanding your end clients
- Understanding your supplier
- Communicate and set expectations
- Build an inspection check list
- Are there mandatory testing requirements



QC 101

- > Inspection types: IPC, PM, PSI, DUPRO, CLC, Sample taking
- > AQL
- > Check lists
- > Factory Audit
- > Testing



	INSTRUCTION / TEST	SAMPLING SIZE	EXPECTED RESULT
1	1, Pull on all metal parts attached to the bag and handle (lock, ring, etc.) 2, Check the seam strength on each part/pocket, especially on the handle or shoulder strap	II	1, Make sure all metal parts are correctly attached/stitched to the fabric of the bag. Pull on the handle/metal part with force to make sure all parts are well fixed and the seam of the handle is not too close to the handle's end. 2, Check the quality of the seaming. Check the bar tacks / backstitch / re-enforcement should be made on all the connect areas. When pulling by force, the inspector must find no breaking. 3, Pull on the shoulder strap /belt /handle with a force of 5kq. After the test, the item should not break and should not have a stretched appearance.
2	The importer information label must not be modified either by hand or by extra sticker.	II	
3	Count and record the number of stitches per inch	S1	
4	Check the item for any strong or offensive odors	II	The bags must not have a strong or bad smell.
5	Measure the length of the handle, perform a handle fixed position check	S2	Lift bag handles to check whether the bag is balance horizontally. The handle fixed positions are symmetrical along the middle axis of the bag. Tolerance +/-0.5cm each side.
6	Fatigue test for all adjustable parts found on each of the sample (i.e., zippers, velcro and snaps).	20 pcs	Do this 20 times
7	1. Color shading check within the same piece: put the same color parts side by side and identify the different dye lot. 2. Color shading check among all of the inspected pieces: place them side by side as per picture "color shading check attached" and identify the different dye lot.	II	Minimum grey scale 4-5 is acceptable for color shading in the same piece and minimum grey scale 4 is acceptable for color shading among the different pieces.
8	Printing / Edge painting check	II	Check if painting uneven, crack, peel off

Inspections Secure Your Product Quality at Every Stage of Production

Production Timeline

0-20%

Initial Product Check (IPC)

Detect quality issues early in the production process (raw materials, machines setup, etc.)

20-80%

During Production Inspection (DUPRO)

Mid-production follow up to ensure that all issues discovered are corrected before order completion

80-100%

Pre-Shipment Inspection (PSI)

Verify the quality of the whole production lot before it leaves the factory

100%

Container Loading Check (CLC)

Ensure every product you paid for makes it to the truck; reduce the risk of damage during shipment

0-100%

Production Monitoring (PM)

Detect quality issues early in the production process (raw materials, machines setup, etc.)

Sample Picking (SP)

Have samples collected from the production line, for your own reference or lab testing



Our Supplier Audit Programs Bring Awareness and Education to Factories

- > **Ethical Audits:** QIMA's Best-In-Class Protocols use innovative solutions and most recognized international standards for ethical compliance
- > **Manufacturing Audits:** Ensure your suppliers' capabilities deliver on their promises
- > **Structural Audits:** To keep workers safe, our licensed civil engineers assess the structural, fire, and electrical safety of factory buildings
- > **Environmental Audits:** We assess your suppliers' pollution risk through actionable audit protocols (ISO 14001) including chemical controls, water testing, waste disposal assessment
- > **C-TPAT Audits:** Audits that strictly adhere to the protocols of U.S. Customs and Border Protection
- > **Food Audits:** Hygiene (GHP) and Good Manufacturing Practice (GMP) Audits for food processing facilities



Fully Accredited Lab Capabilities Across Six In-House Labs and 30+ Preferred Associates

	Tests performed	Equipment	Industry Expertise
QIMA Hong Kong (Kwun Tong)	Physical, Mechanical, Chemical and Optical	GC-MS, ICP-OES, ICP-MS, HPLC, UV/Vis, etc.	<i>Toys, Juvenile, Nursing and Childcare Products, Textiles, Eyewear, Promotional Products, Food Contact</i>
QIMA China (Hangzhou)	Physical, Mechanical, Chemical, Textile and Optical	GC-MS, ICP-OES, ICP-MS, HPLC, UV/Vis, LC-MS, all common textile testing equipment, etc.	
QIMA China (Dongguan)	Physical, Mechanical and Chemical	LCMS-MS, GC-MS, HPLC, IC, ICP-MS, ICP-OES, UV/Vis, etc.	
QIMA US (Buffalo, NY)	Physical, Mechanical and Chemical	GC-MS, ICP-OES, Sound Tester, etc.	<i>Toys, Children's Products, Promotional Products, Nursing and Childcare Products, Food Contact</i>
QIMA France (Toulouse) QIMA France (Poitiers)	Molecular & cellular pharmacology	Cell culture, ELISA, RT-qPCR, histology, flow cytometry, cell imaging systems etc.	<i>Efficacy Claim Substantiation for Cosmetics and Personal Care Products</i>
QIMA Associates	30+ internationally accredited associates / 6,000+ tests available / Access to the best prices and extended capacities		

COVID-19 Changes to Traditional QC Services

Remote Guided Inspections



Remote Audits



Remote Sample Approval



QIMA Safe Place Sanitation Audit



Free Quality Resources

- > 3rd party website
- > Regulators – CPSC.org, Health Canada





Email:

info@qima.com

david.alexander@baysource.net

Visit:

www.qima.com

www.baysourceglobal.com

Q I M A