

# Global Supplier Management Playbook (GSMP)

December 2021



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# Celestica World Class Supplier Management

Welcome to the **Celestica Global Supplier Management Playbook (GSMP)**. This document defines how Celestica uses an established Supplier Management Toolkit to engage with our suppliers, through developing capability and value; open, two-way transparent communication; focusing on preventing defects; measuring performance and delivering excellence.

Celestica believes in rewarding top performing and high potential suppliers via new business awards, joint development programs and through recognition for operational excellence. This 'Playbook' helps document the path to our Preferred Supplier Program.



**Note:** This document is divided into sections to help you find the information you need. Your Buyer or Commodity Manager can provide additional information, as required.

# Celestica World Class Supplier Management



“Our Global Supply Chain Management team focuses on delivering optimized total cost solutions while implementing end-to-end risk mitigation strategies and actively supports the revenue generating engine for our customers and Celestica.

We accomplish this through our world-class team, robust processes and tools and by utilizing our global leverage to achieve meaningful competitive advantage.”



**Michael Dahl Madsen**  
Chief Procurement Officer

# Sustainability

At Celestica, we are committed to driving our sustainability initiative by collaborating with each other, as well as with our customers, suppliers and local communities to drive positive change and, ultimately, foster a company-wide culture of sustainability. With 20 Celestica sites ISO 14001 certified, we leverage our design, engineering and supply chain expertise and resources to drive and support sustainable initiatives throughout our value chain.

## How we deploy sustainability at Celestica:

- Engage our full value chain to ensure compliance of employee and environmental sustainability practices.
- Focus on reducing emissions from our logistical footprint, such as through consolidating shipments, reducing part numbers and empty spaces in shipments, and optimizing transportation methods and packaging.
- Minimize impact of our operations through our supply chain (reduce greenhouse gas (GHG) emissions and water consumption; reduce, reuse and recycle products and materials supporting a circular economy; chemical use reduction; and minimizing the number of chemicals on hand)
- Enable our customers to improve their material efficiency, reduce waste, and bring smart energy products to market quickly and efficiently through our engineering and design expertise.



We have linked Celestica's goals to the United Nations Sustainable Development Goals (SDGs).

Our suppliers are critical in the support of Celestica's desire to make the biggest impact. Celestica supports SDG 12 – Responsible Consumption and Production.

Our goal is to ensure we are respecting human rights, social and environmental impacts and working towards improving efficiency and effectiveness of material and energy use. We do this through the establishment of sustainable production and consumption programs with a focus on the circular model for products we consume and produce on behalf of our customers.



# Sustainability

Celestica has a global network of more than 4,000 active direct suppliers, and our preferred suppliers are located in close proximity to our Centers of Excellence. This alignment increases the speed and flexibility of our supply chain and provides the shortest overall lead times for our customers. Components and raw materials are sourced globally, with most indirect materials originating in close proximity to the majority of our manufacturing locations, resulting in a reduced carbon footprint.

## We engage with suppliers in these ways:

- Request compliance with the Responsible Business Alliance (RBA) Code of Conduct which includes: complete on-site verification visits for Labour, Health and Safety, Environmental, Ethics and Management systems
- Visit our suppliers to verify compliance with RBA SAQ, and request action if deficiencies are found
- Ensure compliance with legislation including, but not limited to, Restriction of Hazardous Substances (RoHs), Conflict Minerals, Responsible Minerals Assurance Process (RMAP) and Registration, Evaluation, Authorization and Restriction of Chemicals (REACH)
- Measure and provide feedback on supplier performance using our enhanced SPoT Global Dashboard on environmental and social compliance

Reference Celestica's annual Sustainability Report available at [Celestica.com/About Us/Sustainability](http://Celestica.com/About Us/Sustainability).

Responsible Business Alliance's Code of Conduct available at <http://www.responsiblebusiness.org>.

Additional requirements including Conflict Minerals can be found referenced on the Supplier Resources page of this document.

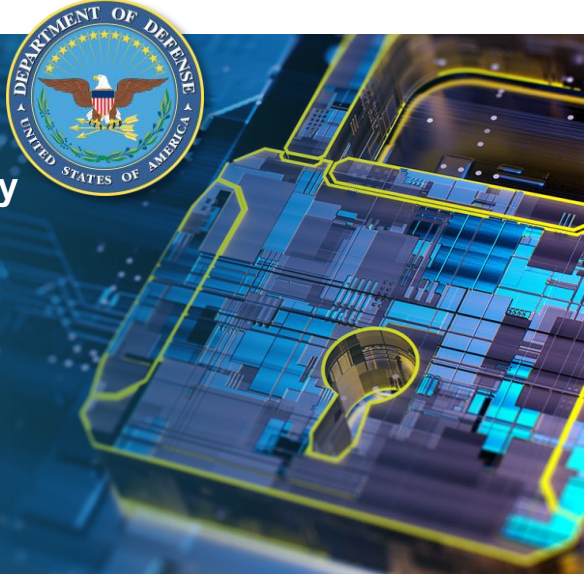
# Why Cybersecurity Matters

At Celestica, we continuously improve security controls to protect company and customer data and increase information reliability. The primary objective of Supply Chain Risk Management (SCRM) is to identify, assess, and mitigate “products and services that may contain potentially malicious functionality, are counterfeit, or are vulnerable due to poor manufacturing and development practices within the cyber supply chain.”

(NIST Special Publication 800-161, Supply Chain Risk Management Practices for Federal Information Systems and Organizations)

## Celestica must comply with regulatory compliance (Aerospace & Defence, HealthTech) and customer security requirements:

- Perform continuous risk assessments based on well known security frameworks such as ISO 27001/2, NIST 800-53, NIST 800-171
- If significant changes occur, it must be reported to the appropriate levels
- Any incidents involving supply chain events must be reported, according to contract and compliance requirements and through Celestica Process Change Notification (PCN)



**For Aerospace and Defense compliance, Celestica’s security program flows down to its suppliers to comply with DFARS 252.204-7012, Defense Industrial Base Compliance Information clause and customer requirements.**

According to Gartner, impersonation attacks are increasing due to the amount of trust users place on the identity of incoming email. Limiting significant financial loss depends on effective impersonation email filtering, improved sender and recipient relationship identity (DKIM/SPF), and end-user training and education.

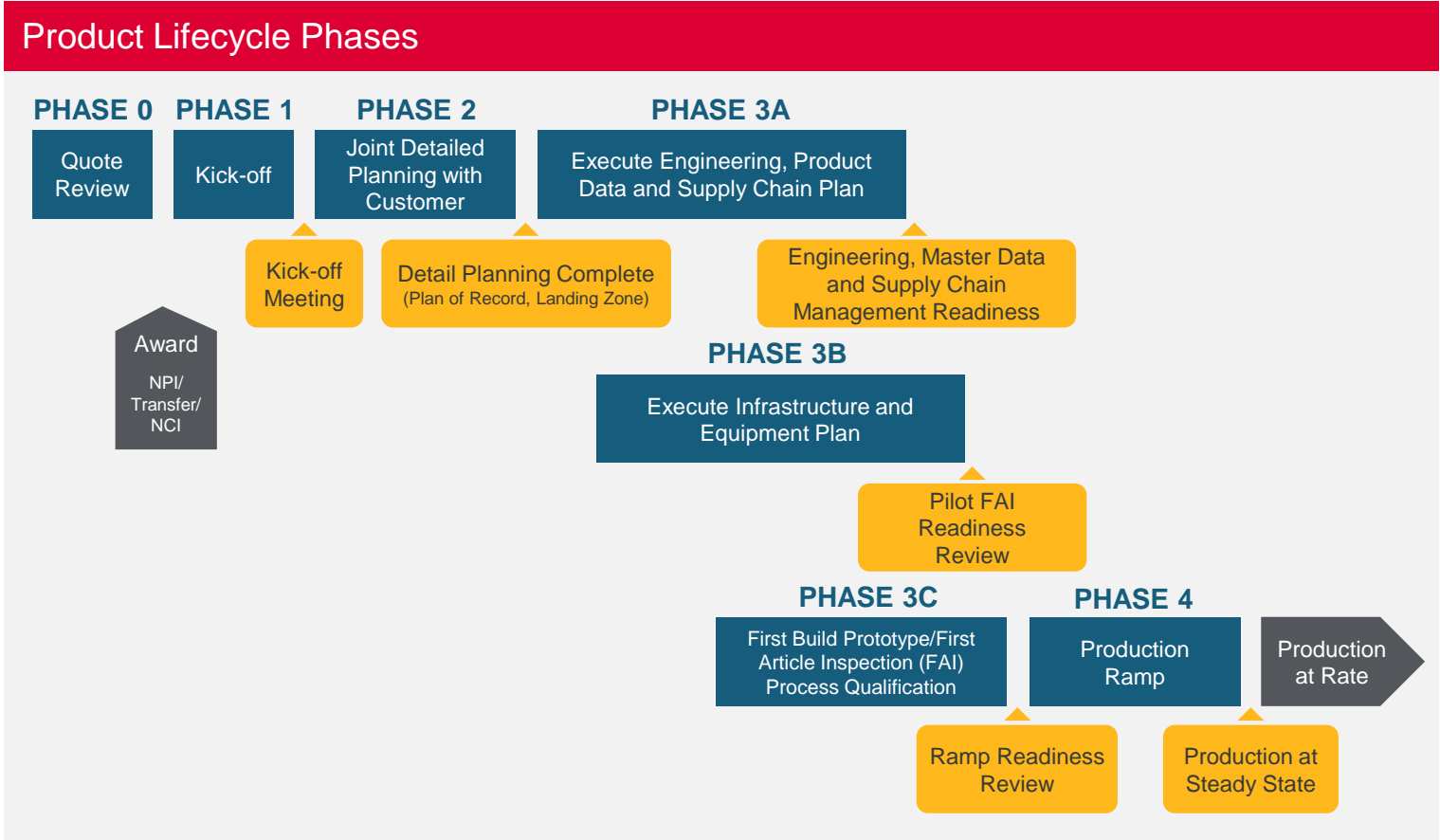
At Celestica, we stay alerted and in close collaboration with our suppliers to identify and isolate any potential cybersecurity attacks and continuously enhance controls. We are encouraging our suppliers to apply the same within their supply chain landscape.

# Early Supplier Involvement - Flawless Launch Process

The purpose of the Flawless Launch (FL) process is to improve return on investment (ROI) for all new product development or product transfer initiatives by investing resources in the programs that are aligned with the strategic direction of the company.

A FL project may be initiated in response to a need for new product development such as new technology platform, for the launch of a new customer's product design or where product manufacturing is transferring ownership, location or both. FL may also be initiated as a control mechanism for a significant product/process change requiring capital investment.

A cross functional review is held to aid communication and obtain buy-in, and includes representatives from Supply Chain, Information Technology (IT), New Product Introduction (NPI), Logistics, Finance, Human Resources (HR), Product Management, Global Customer Business Unit (GCBU), Research and Development (R&D), Operations, Product Engineering, Reliability, and Quality.



## GOALS OF OUR FLAWLESS LAUNCH PROCESS

Delivering products with high levels of quality, manufacturability, reliability, and maintainability	Reducing risks prior to and during execution	Accelerating time-to-market	Satisfying/exceeding customer needs, while enhancing margins	Compliance with regulatory requirements
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# Early Supplier Involvement - Flawless Launch Process

The Program Managers and Customer Focus Team Leads head up Project Core Teams working to a Plan of Record (POR). They deploy a set of formalized phase gate reviews so that all functional areas are in concert with the customer needs and understand the level of maturity and manufacturing readiness.

Program Management tools are utilized to assess risk and plan and track actions and progress. Projects are scalable according to their criticality.

Roles of team members, attendance and expectations at each phase are defined. Web-based collaboration systems such as Smartsheet® are in place to aid team interaction.

Advanced Product Quality Planning (APQP) and Production Part Approval Process (PPAP) techniques are implemented as necessary to define and approve process capability and the required process controls. Outputs typically include Process Failure Mode and Effects Analysis (PFMEA), Control Plan, Process Flow, Inspection Plan, First Article Inspection Report (FAIR), Test Plan, Standard Work Instructions, and Process Capability reports.

Prototype and first production runs are used to qualify the manufacturing process prior to ramp up of production.

## Product Lifecycle Phase Activities

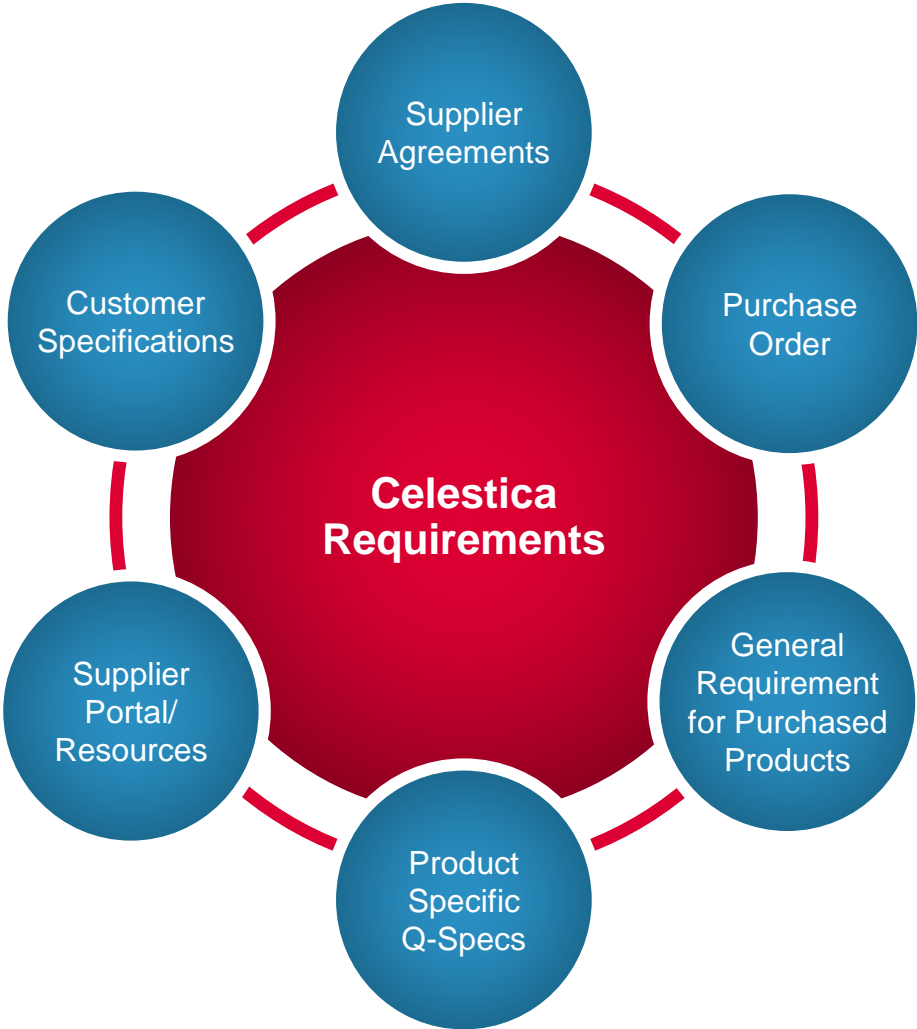
Phase	Outcome	Summary of Phase Activities
0	Assessment of Risk of Assigning Program to Specific Site	<ul style="list-style-type: none"> <li>Review program requirements against site capabilities</li> </ul>
1	Transfer/NPI Kick-off Complete	<ul style="list-style-type: none"> <li>Kick off meeting with all stakeholders and customer - identify major risks, functional strategies defined, major activities/resources required; next pass at costs versus quote assumptions</li> <li>Phase dates established; critical assumptions verified</li> <li>Customer communication plan and joint governance plan</li> </ul>
2	Detail Project Planning Complete	<ul style="list-style-type: none"> <li>Create detailed implementation Gantt/project plan/critical path clear, establish POR</li> <li>Revise/refine functional assumptions and plans</li> <li>Create ramp P&amp;L and resources ramp</li> <li>Customer review and approval</li> </ul>
3A	Execute Engineering, Product Data and Supply Chain Plan	<ul style="list-style-type: none"> <li>Complete Product Data Management (PDM) and Master Data Management (MDM) tasks (Bill of Materials (BOM), Approved Vendor List (AVL), info-records, etc.)</li> <li>FAI supply plan in place; ramp sourcing plan in process/on pace, clear path to production</li> <li>Product forecast and Order Transition plan in process/on pace/complete</li> <li>E-commerce linkages/customer interfaces (Electronic Data Interchange (EDI), business-to-business (B2B), data feeds)</li> <li>Hiring and training in process and on pace</li> <li>NRE/Capex Plan executed or on pace</li> </ul>
3B	Execute Infrastructure and Equipment Plan	<ul style="list-style-type: none"> <li>Install/build/validate Infrastructure, equipment, new software</li> <li>Site certifications and audits (AS etc.)</li> </ul>
3C	First Product Builds Complete (Release to Production)	<ul style="list-style-type: none"> <li>Validate and certify processes</li> <li>Run successful pilot runs, FAIs, PPAPs (as required)</li> </ul>
4	Ramp up Complete, Process/Production at Steady State	<ul style="list-style-type: none"> <li>Ramp up production and resources</li> <li>Customer reviews</li> </ul>
5	Project Closed	<ul style="list-style-type: none"> <li>Perform lessons learned, close project</li> </ul>

# Early Supplier Involvement - Requirements Flow Down

For ongoing supply of products it's equally critical to provide our suppliers with all the information needed to enable the provision of defect-free products and services which continue to satisfy and excite our customers.

Requirements are flowed down to suppliers through a variety of information streams. It's also our expectation that applicable customer requirements are flowed down to sub-tier suppliers.

If there is ever any doubt on what is the actual requirement, suppliers are responsible for seeking clarification.



**Note:** Refer to the Supplier Resources section of this document.

# Supplier Qualification and Assessment

## Supplier Qualification

At Celestica, our Global Sourcing Team strives to form long-term relationships with the best direct and indirect suppliers in the market. When we identify a potential new supplier, this supplier is evaluated against our qualification criteria. We select a supplier on the basis of satisfactory results of the qualification process along with best fit to the Global Sourcing and Commodity Engineering strategy.

## Qualification Criteria

- Agreement to abide by the Celestica General Requirements for Purchased product and sector specific requirements
- Confirmation of required customer approvals or AVL status
- Current applicable Quality System registration certificate
- Satisfactory on-site Quality Audit
- Satisfactory submission of the Supplier Risk Assessment questionnaire (Healthtech/Aerospace and Defense)
- Manufacturing and Technology Capability
- Applicable contracts in place
- Financial assessment

## Supplier Qualification Levels

### Acceptable to Quote (A2Q)

- Required to be able to send request for quotation (RFQ)
- Valid for up to two years or until RFQ received

### Acceptable to Source (A2S)

- Required to be able to receive purchase order (PO)
- Valid for 90 days or until Qual approved

### Qualified (Qual)

- Fully approved status
- Valid for up to two years and renewable subject to continued compliance

**Note:** Please refer to the Celestica General Requirements for Purchased Parts for details on FAIR and PPAP requirements.

# Supplier Qualification and Assessment

## Supplier Categorization

Each stage of the qualification process has a separate set of requirements which must be completed for a supplier to be confirmed as meeting the requirements for that qualification level. The minimum expectations for each stage of qualification are as shown in the matrix on this page.

The matrix highlights the assessment differences required as well as the sector specific requirements for Healthcare and Aerospace.

- Custom  
(Build to Print [B2P])
- Electronic Components  
(Commercial off-the-shelf [COTS])
- Chemicals  
(supplier of chemical raw materials only)
- Distributors
- Brokers

## Supplier Qualification Status

QUALIFICATION STAGE	REQUIREMENTS	CUSTOM / BUILD TO PRINT	ELECTRONIC COMPONENTS / CATALOGUE	CHEMICALS	DISTRIBUTORS	BROKERS	COMMENTS	
ACCEPTABLE TO QUOTE	Supplier has ISO9001 registration	✓	✓	✓	✓	✓	This is minimum requirement for all suppliers	
	Supplier is capable to supply component at required quality levels	✓	✓	✓	✓		GCE / RSE defines supplier capability / quality based on supplier profile.	
	Supplier has a copy of SPEC-7	✓	✓	✓	✓		Should be issued to supplier as part of early capability discussions	
	Supplier has a copy of POL-11					✓	Quality requirements for Independent Distributors	
	Supplier has a copy of generic Chemical Qspecs			✓			Chemical Qspec issued to all suppliers of chemicals	
	<b>Additional Requirements for Suppliers Supporting Healthcare</b>							
	Supplier agrees to support Healthcare	✓	✓	✓	✓	✓	Supplier must acknowledge use of their part in the final product - <i>Healthcare only</i>	
ACCEPTABLE TO SOURCE	Celestica has completed a supplier on site audit	✓		✓		✓	All Custom, BTP & certain Chemicals suppliers must pass site audit prior to sourcing	
	Celestica has completed a remote quality audit		✓				Utilize document DOC00158781 to facilitate remote quality audit for electronic components, optional for other catalogue commodities	
	POL-15 has been agreed and signed			✓			POL-15 must be agreed and signed for chemical suppliers at this stage	
	Qualification data pack has been issued	✓	✓	✓	✓	✓	Remainder of qualification data pack issued and acknowledged by the supplier	
	<b>Additional Requirements for Suppliers Supporting Healthcare or Aerospace</b>							
		Supplier has completed pre-survey	✓	✓	✓	✓	✓	FORM-86(Healthcare) or FORM-87(Aerospace) is required as part of the Risk Assessment
	SPEC-7 has been agreed and signed	✓	✓	✓	✓	✓	SPEC-7 must be agreed and signed at this stage - <i>Healthcare only</i>	
	Risk Assessment of the supplier / part	✓	✓	✓	✓	✓	Risk based approach to identify controls required - <i>Healthcare only</i> .	
QUALIFIED	ROHS Audit has been completed	✓	✓	✓			Paper verification acceptable, not needed for packaging and pure-play Aerospace suppliers	
	SPEC-7 has been agreed	✓	✓	✓	✓		Supplier agreement by email is OK, <i>NOTE above Healthcare signature is mandatory</i>	
	POL-11 has been agreed					✓		
	Barcode requirements STD-51 are met	✓	✓		✓	✓	Supplier agrees to spec and sample has been approved by barcode team.	
	Supplier portal contact up to date	✓	✓	✓	✓	✓	Required for Qspec contact - list of portal suppliers available on GCE intranet	

**Note:** Supplier disqualification (DISQUAL) is considered only after supplier improvement and development initiatives indicate that the supplier continues to be unable to meet requirements or is otherwise unresponsive. Your Commodity Manager or Site Supply Chain Lead will notify you of a decision to move to DISQUAL, if it applies.

# Supplier Qualification and Assessment

## Supplier Audit

Celestica employs a system of on-site and remote audits to verify system compliance with required standards and codes. We deploy audits, as appropriate, to assess the control of manufacturing processes, safety, quality, hazardous substance control and environmental impact. Audits are scheduled using a risk-based approach. Critical suppliers are identified and tracked.

### Audits: What, When, and Why?

**Supplier Assessment** – On-site, due diligence during qualification and requalification process.

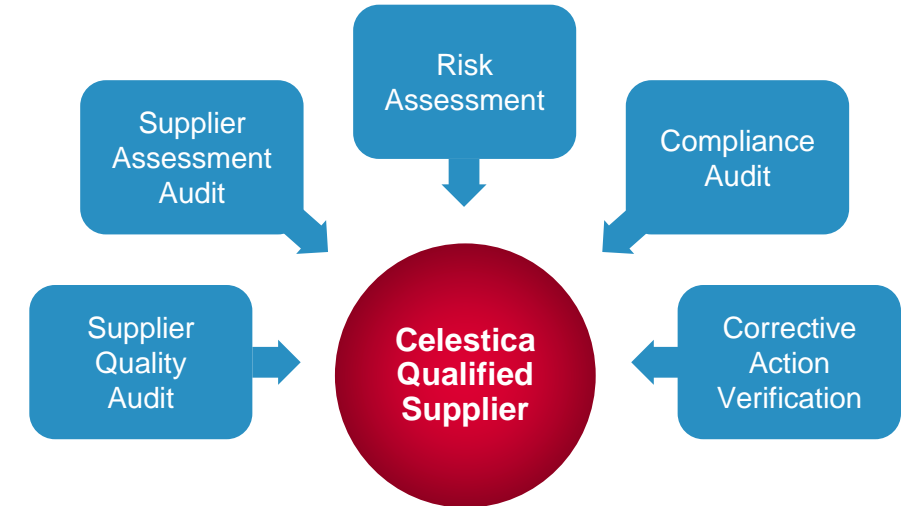
**Risk Assessment Audits** – Remote or on-site, used to gather information and assess supply chain risks.

**Supplier Quality Audit** – Scheduled “risk-based” audit based on criticality, performance or changes in the supplier’s organization or process. Usually on-site but can be completed remotely if situation dictates.

**Compliance Audits** – Audit carried out to verify compliance with international or industry standards such as RoHs.

**Corrective Action Verification/Process Control Plan Audit** – On-site deep dive process audit, aimed at verifying effectiveness of containment, corrective action or adequacy of preventive actions.

**Customer Requested Supplier Audits** – When requested by, and/or agreed by our customer, audits may be conducted on suppliers who are Customer Directed AVL or Customer Qualified Suppliers.



### Supplier Audit Objectives

- Verify compliance with industry standards, regulatory requirements and codes
- Identify and address risk in the supply chain
- To obtain corrective actions if deficiencies are found that improve supplier’s Quality Systems
- Verify flow down of requirements to sub-tier suppliers

**Note:**

It is a requirement for a qualified supplier to grant access by Celestica’s representative or our customer’s representative to your facility or sub-tier facility. Security clearance required for restricted areas is respected. Refer to General Requirements for Purchased Parts.

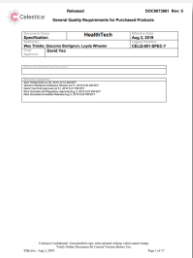
# Part Qualification

## Part Approval Process

One or two different validation processes will be utilized, based on industry requirements and level of risk for a given part number:

- First Article Inspection Report (FAIR) is a submission of production representative samples, inspection layout and supporting documentation.
- Production Part Approval Process (PPAP) may be required for high-risk items that have critical to quality attributes and require tightened control.

Suppliers are notified in advance of the RFQ/RFP as to what level of compliance needs to be submitted based on levels of criticality and risk. Supplier quote should reflect these additional steps and timelines to comply, as all suppliers quoting on high-risk items will be under the same approval criteria.



### General Quality Requirements for Purchased Parts

**Note:** Please refer to the “General Requirements for Purchased Parts” document, located in the Celestica Supplier Resources page, for details on FAIR and PPAP requirements.

# Global Supplier Management Toolkit



## Supplier Performance Tool (SPoT)

- A single, consistent scorecard used for all Celestica suppliers globally
- Measures supplier performance across key metrics: Cost, Quality, Delivery, Technology and Sustainability
- Provides real-time visibility of supplier performance and drives continuous improvement



## Global Preferred Supplier List

- Consolidates global Celestica spend to allow customers to utilize our leverage with Preferred Suppliers
- Online, real-time database
- In-depth details on the capability of each supplier for easy selection based on project Critical to Quality (CTQ) criteria



## How Does This Benefit Our Customers?

- Helps build strategic alliances with reliable, innovative, high-value suppliers
- Reduces costs, achieves efficiencies and improves execution
- Drives world-class quality

# Global Supplier Management Toolkit

## Global Preferred Supplier List (GPSL)

### What is a Preferred Supplier?

Suppliers selected to be part of our Preferred Supplier Program will benefit from a long-term relationship with Celestica. This includes many opportunities to add value and a potential to significantly grow business.

Suppliers who meet the necessary criteria are placed on the GPSL and are tracked using the SPoT Scorecard.

As a GPSL supplier, you will have regular reviews with your commodity management team. During these reviews, opportunities to develop the supplier are identified and actioned. Performance gaps can be addressed and corrected by working as a team.

The Preferred Supplier Program ensures that, in areas which are not vertically integrated, we can still provide a “virtually integrated” World Class Supply Chain.

### Preferred Suppliers must:

- Value Celestica as a Demand Creator
- Pass our Supplier Risk Assessment criteria
- Be certified to, or compliant with, applicable Quality Management Standards and have passed the Celestica Supplier Audit within a three-year cycle
- Provide Technical/Design support as required
- Consistently score greater than 60% on SPoT Scorecard
- Not drop below Green on their SPoT for more than one quarter



# Global Supplier Management Toolkit

## Global Preferred Supplier List (GPSL)

At Celestica, we take pride in working with the very best suppliers in the world. Suppliers who as part of our extended family, enjoy participating in our journey to excellence. On the right side of this page you will see a profile of what we value and what we consider to be the “best-in-class” attributes of a World-Class Supplier.

### World Class Supplier Profile

- Strong management commitment to quality, productivity, and financial stability
- Robust and flexible materials management
- Relentless drive to enhance value and deliver cost-effective solutions
- Cultural fit – values working with Celestia
- Excellent technical and production capabilities
- Leading expertise in product type and target market
- Transparent communication, easy to do business with
- A forward-looking culture of advanced concepts and continuous improvement
- Innovative and no fear of driving breakthrough ideas
- Ethical and regulatory compliant – sustainability is a key factor
- Responsive to market changes

# Global Supplier Management Toolkit

## Supplier Performance Tool (SPoT)

The Celestica Supplier Management Toolkit includes our supplier performance tool called SPoT. SPoT is the only scorecard used for Celestica suppliers globally. It provides excellent visibility, enabling us to monitor how suppliers are performing across five categories: Productivity, Technology, Quality, Delivery and Sustainability. Our SPoT scorecard is fully automated and housed in a Power BI interface. Scores are available for any supplier where we have direct spend. The tool is set up to allow scoring based on segment, commodity or customer supported. This information is published and provided to suppliers on a quarterly basis.

**Your assigned Commodity Manager will discuss your individual goals and targets with you, however the general requirements are as follows:**

- Suppliers are required to maintain a minimum SPoT score of 50 to be acceptable.
- If your score drops below 50 points, for one or more quarters, you will be asked to improve and we may escalate to a Supplier Quality Improvement Plan. This may affect the amount of business awarded to a supplier.
- If a PSL supplier's performance falls below 60 points for one or more quarters, they will be asked to improve to avoid impacting their PSL status and future business.

**Note:**

We have developed four distinct variations of the scorecard to cover Build-To-Print, Distribution, High-End Semi and Electronics. This allows us to more accurately score supplier performance across our commodities.

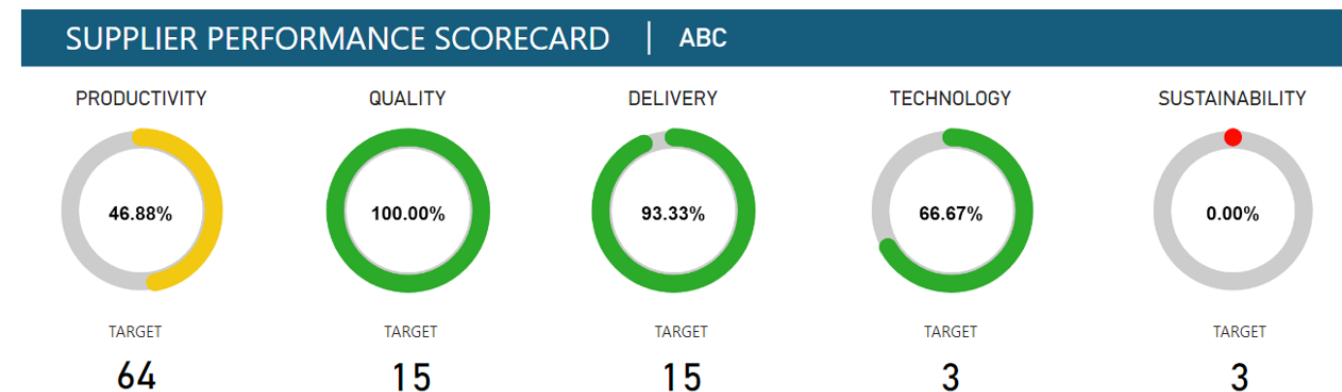
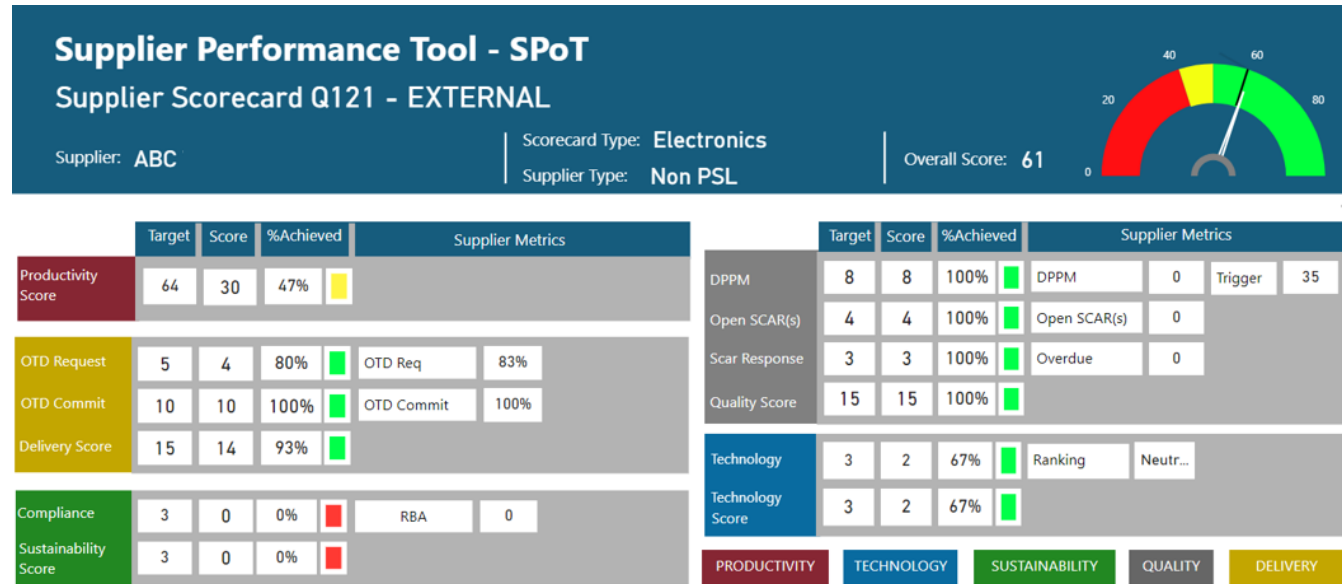
# Global Supplier Management Toolkit

## Supplier Performance Tool (SPoT)



# Global Supplier Management Toolkit

## Supplier Performance Tool (SPoT)

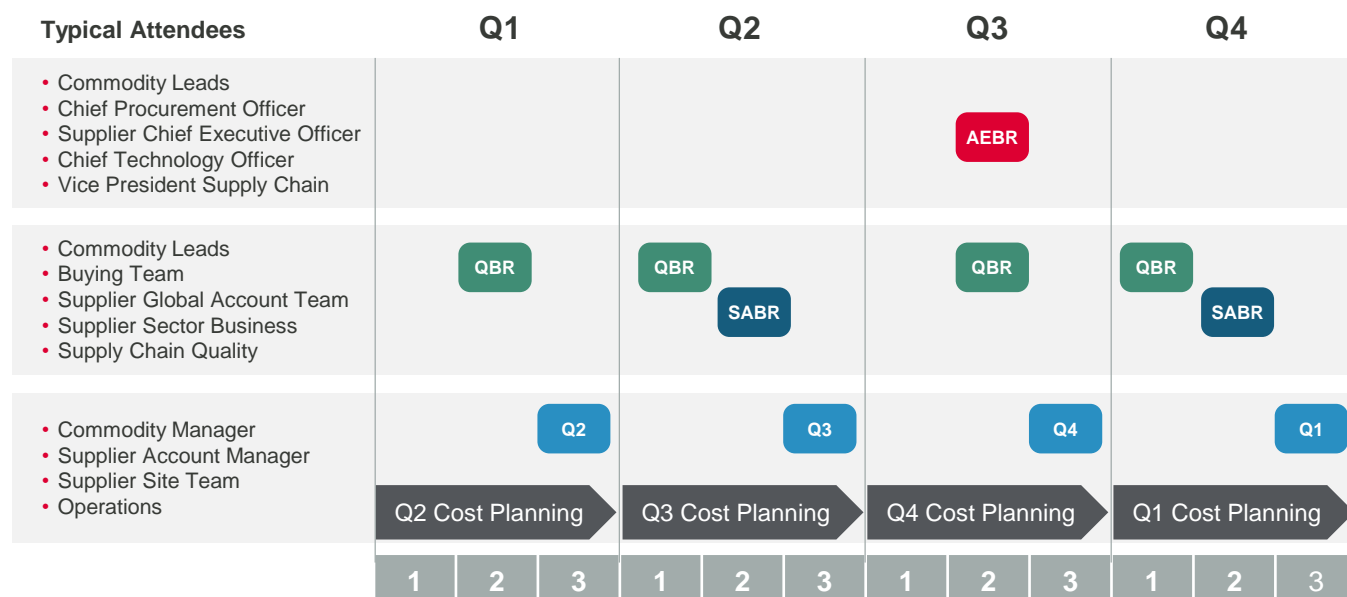


**Focus on key areas and initiatives to drive change and develop a Continuous Improvement culture.**

- SPoT Scorecard is issued per fiscal quarter
- Focus on five performance categories: Productivity, Quality, Delivery, Technology and Sustainability
- Supplier must meet or exceed targets
- Feeds the preferred supplier program, contract negotiations, supplier development and continuous improvement
- Provides input for SQIP and Supplier Recovery Team (SRT) actions

# Global Supplier Management Toolkit


## Periodic Business Review



### Business Reviews

- QBR** Quarterly Business Review Celestica Location Strategic Suppliers
- SABR** Semi Annual Business Review Celestica Location Leverage Suppliers
- AEBR** Annual Executive Business Review Celestica Location

### Cost Reviews

-  Cost Planning Review Celestica/ Supplier Location
- Quarter QCR** Quarter Cost Review Celestica Location

Actual governance cycle may differ from above diagram.

As part of our Supplier Governance Cycle, Preferred Suppliers may also receive Commodity Management led business reviews including Periodic Business Reviews (PBRs). These meetings promote mutual accountability, candid feedback, transparency and support a relationship of collaborative growth. Topics covered in a PBR typically include:

- Collaborative business planning including: Business and market updates, Technology Roadmap, capital investments, and alignment of strategic priorities and focus
- S.T.E.P. Effects (Social, Technical, Environmental and Political)
- Growth and new business opportunities
- Commercial agreements such as quotation turns, optimized payment terms, material margin enhancement and inventory control
- Quarterly SPoT performance results against Productivity, Quality, Delivery, Technology and Sustainability objectives
- Preferred Supplier status and long-term agreements
- Development opportunities such as VAVE and Lean improvement initiatives and Virtual Integration initiatives such as EDI and Supplier Managed Inventory (SMI)
- Planned changes of significance, e.g., new ownership, organizational structure or manufacturing location.

# Problem Resolution

## Problem Solving Culture

Celestica has high expectations for structured problem solving. Management commitment is critical for budget and follow-through with plans, in an environment where employees feel comfortable raising any issues. This includes taking time to define problems thoroughly, deploying cross-functional teams and utilizing formal quality tools. Firstly, we must jointly contain the problem and prevent further escapes until the problem can be permanently corrected. It also means we must verify the true root cause (recreate at will) and take actions to correct the problem to prevent it from being repeated. You must specifically address the root cause, rather than its symptoms.

Problem Solving Tools			
Eight Disciplines (8D) Test of Problem Solving (TOPS) Define, Measure, Analyze, Improve, Control (DMAIC) 5W2H (What, When, Where, Why, Who, How, How Much) Flow Diagram	A3 Plan-Do-Check-Act (PDCA) Quality of Service (QOS) Pareto Diagram SPC/Control Charts	Fishbone Diagram Design of Experiments (DOE) 3 Level 5-Why Drill Deep Reverse Failure Mode and Effect Analysis (RFMEA) Fault Tree Analysis (FTA) IS/IS Not Analysis	Poka Yoke Checklists Drill Wide/Read Across Lessons Learned Failure Mode and Effects Analysis (FMEA)

- Your Celestica Supplier Quality or site representative will communicate any Nonconforming Material Reports (NCMRs), specific to your company. They will work with you to contain and correct the problem and will strive to minimize impact on our operations.
- If containment is compromised, problems repeat, or are considered to be systemic in nature, you may receive a formal **Supplier Corrective Action Request (SCAR)**.
- We encourage our suppliers to adopt the 8D method of structured problem resolution and corrective action. Involving us as much as possible is key to getting a customer perspective.
- Preventive actions focus on improving the systems, metrics and fail proofing the process, as well as “reading across” risks to other products and processes through techniques such as Process Failure Mode and Effects Analysis (PFMEA).
- Training is available to suppliers in the 8D approach to problem solving. Please ask your assigned Commodity Manager for details.
- Finally, identify and focus on lessons learned from the problems and solutions. This will enable your systems to be improved.

**Note:** Please also reference Celestica General Requirements in supplier resources section of Celestica.com

# Problem Resolution

Identify and address systemic issues and work with suppliers and Celestica's plant SMEs to effectively prevent problems.

## Supplier Quality Improvement Process (SQIP)

Our Supplier Quality Teams and Commodity Managers continuously monitor supplier performance and will work with you to address specific issues as they arise. Performance is also discussed during Periodic Business Reviews. If there are issues with performance or systemic quality problems, this may be escalated to our corporate team, who will contact you to discuss performance. They will identify and address systemic issues and assist with communication with Celestica's sites, to effectively prevent repeat problems.

Where performance has been below the required scores for an extended period, a Supplier Quality Improvement Plan (SQIP) may be initiated. A formal letter is sent to company leadership and a kick-off meeting is arranged.

A SQIP plan is required within 30 days of the kick-off, with a targeted graduation after 90 days.

The SQIP follows a DMAIC or PDCA format and must directly address the issues which are driving the performance metric. Our Field Quality Engineers will drive regular work sessions aimed at correcting performance.

Your Commodity Manager or Site Supply Chain Lead will notify you if there is a decision to move to DISQUAL status. In these cases, AVL/customer designated suppliers are notified to the applicable end customer for disposition.

## Supplier Disqualification

If formal improvement programs such as SQIP and SRT have not yielded a successful recovery, disqualification may be initiated. Disqualification may be based on single or multiple part numbers, single or multiple commodities or at the supplier level meaning everything supplied.

# Risk Mitigation and Supplier Recovery

Supplier Risk Assessments are completed to determine the impact of critical intellectual property and single/sole-source relationships. Risk mitigation plans are put in place where potential business risks are identified. Plans may include, but will not be limited to, the following: alternative sourcing strategy, supplier vendor managed inventory (VMI) programs, early supplier engagement, and supplier SIOP.

Celestica’s supplier recovery standard framework includes appropriate deployment of cross-functional Supplier Recovery Teams (SRT), enhancing critical skills and initiating other processes required for fast recovery. Risks and recovery plans are reported in regular senior executive review meetings.

## Standard Work - Example of DMAIC Process

	90-120 Days			120+ Days
Recovery I/O	1. Define	2. Measure and Analyze	3. Improve	4. Control
<b>Inputs</b>	<ul style="list-style-type: none"> <li>Metric review (de-commits, missed commits, late commits etc.)</li> <li>On-Time Delivery to Request (OTD-R)/past due baseline</li> <li>Stakeholder inputs</li> </ul>	<ul style="list-style-type: none"> <li>Problem statement</li> <li>Key Performance Indicator (KPI) analysis</li> <li>Root cause brainstorming tools, 5 Why, 5M, etc.</li> <li>Capacity analysis supplier/sub-tier</li> <li>PO/planning review</li> <li>Contract review</li> <li>Manufacturing/engineering review</li> </ul>	<ul style="list-style-type: none"> <li>Clear root cause statement(s) and supporting data</li> <li>Daily SRT meeting - KPI review and action rail</li> <li>KPI performance trends</li> </ul>	<ul style="list-style-type: none"> <li>KPI/metrics tracking positive</li> <li>Systemic "get well" plan for supplier is sustainable</li> <li>Corrective actions are verified and measured as effective</li> <li>Document changes and processes improved</li> <li>Re-run risk assessment</li> </ul>
<b>Outputs/Exit Stage Criteria</b>	<ul style="list-style-type: none"> <li>Problem statement</li> <li>Effective containment plan/execution</li> <li>Objectives and goals</li> </ul>	<ul style="list-style-type: none"> <li>Root cause(s) identified for occurrence and escape</li> <li>Systemic issues identified</li> <li>Timing plan impacting KPI's</li> <li>Audit of supplier processes</li> </ul>	<ul style="list-style-type: none"> <li>Corrective actions documented and implemented</li> <li>Supplier acknowledges and commits to past due. On Time to Request (OTTR) and achieving forecasted demand</li> <li>Systemic "get well" plan for supplier</li> <li>Control plan implemented</li> <li>De-escalation of critical part impacting site delivery</li> <li>KPI/metrics tracking with positive trends</li> </ul>	<ul style="list-style-type: none"> <li>All stages of DMAIC problem solving have been completed</li> <li>Leading indicator metrics goals are met</li> <li>Supplier has maintained KPI's for &gt;90 days</li> <li>Supplier risk assessment result moved to yellow or green</li> </ul>

## Supplier Recovery Team (SRT)

- Suppliers with chronic issues, such as poor delivery, are subject to a supplier recovery plan following Root Cause and Corrective Action (RCCA)/DMAIC methodologies.
- SRT members typically include members from the Buying Team, Commodity Management Team (Commodity Manager/Global Commodity Engineer), Quality, SLM team, OPEX, or Six Sigma Black Belts and the supplier.
- Clearly defined kickoff activities determine players and actions from the start (who does what, by when).
- Teams identify root cause and corrective actions required to recover short-term supply gaps, and long-term strategic issues, which drive sustainable recovery for part supply.
- SRT’s have defined actions, timing plans and sign off.
- Metrics are put in place to measure recovery performance, delivery flexibility and “burn down” with regular team review and follow up.



# Change Management Process

Changes in the supply chain are one of the biggest causes of downstream variation, degraded performance and disruption. Poor change management often results in customer dissatisfaction.

Suppliers are responsible for notifying Celestica well in advance of any product and process related changes or problems that may affect fit, form, function, quality, safety or reliability. Suspected product quality escapes must also be notified via a Quality Alert.

Celestica has established a simple Process Change Notification (PCN) system which suppliers must follow. All notifications are made to a centralized PCN coordinator at the email address listed below. Notifications are processed within 30 days of receipt.

## Celestica Global PCN Coordinator

Plot 15, Jalan Hi-Tech 2/3 Phase 1,  
Kulim Hi-Tech Park, 09000 Kulim, Kedah,  
Malaysia  
fax: +604-4034299  
[pcn@celestica.com](mailto:pcn@celestica.com)

## When should I notify Celestica?

- Product discontinuance/end of life
- Design change
- Material change
- Manufacturing process change/plant layout
- Plant closure/insolvency
- New manufacturing site, relocation or movement of the manufacturing site
- Product quality escape
- Packaging/labelling or carrier change
- Environmental compliance, hazardous substance, cybersecurity event
- Change of test and/or inspection specifications

Note: Refer to DOC0073917 Celestica Notification of Product/Process Changes, Discontinued Availability and Product Alerts by Suppliers.

# Supplier Development

Celestica believes in working with our supply chain in a process of continuous improvement. It's critical to us to fully deploy our Supplier Performance Management and Risk Management model and then apply the right segmentation process to identify the suppliers with potential for exceptional performance.

Supplier Development can result from many sources such as transitions, SPoT scorecard reviews, PSL nominations, contract negotiations or Periodic Business Reviews. Our development programs are tailored to a supplier and focus on a combination of capability, knowledge and value enhancement. We strive for quantifiable and measurable results that lead to business benefits.

## Objectives of Supplier Development

Drive Celestica's supplier performance objectives and zero-defect culture

- Enhance value through elimination of waste, cost and process variation
- Develop technical supply chain competencies
- Support moving a supplier to PSL status
- Assist supplier to integrate new capabilities to support future business
- To share best practice deployed in Celestica Operations
- Strengthen knowledge of requirements, tools and techniques
- Identify and address risk or systematic quality and performance issues
- Based on supplier performance data and business requirements
- Improve business alignment and strategic alliance

## Supplier Development Tools

CAPABILITY	KNOWLEDGE	VALUE	RECOGNITION
<ul style="list-style-type: none"> <li>• Technology assessment</li> <li>• SQIP</li> <li>• Auditing for Improvement</li> <li>• Managing Transitions</li> <li>• Provide tools</li> <li>• Expand Commodities</li> </ul>	<ul style="list-style-type: none"> <li>• Requirements flow down</li> <li>• Supplier Summit</li> <li>• Supplier Skills Development</li> <li>• Supplier Portal</li> </ul>	<ul style="list-style-type: none"> <li>• SIOP</li> <li>• SMI</li> <li>• VAVE Projects</li> <li>• Lean</li> <li>• DMAIC</li> </ul>	<ul style="list-style-type: none"> <li>• Supplier Excellence Awards</li> <li>• New Business Awards</li> </ul>

Strengthen  
RCCA

Zero Tolerance  
of Defects

Eliminate  
Systemic  
Problems

## PERFORMANCE

Focused  
Escalations

Drive Down  
Variation

# Driving Value and Continuous Improvement

## An accountable workforce, delivering predictable results.

We have established a Celestica Tiered Production System (TPS) with objectives targeted at motivating an accountable workforce to continually improve operational performance in the areas of Safety, Quality, Delivery, Cost, Inventory and People.

By striving to achieve a culture of data-driven continuous improvement and zero tolerance to quality escapes, our suppliers are a critical element in achieving our combined goals of operational excellence.

We are also deploying TPS through our supply chain, focusing on joint projects to enhance value by creating a more visual workplace, eliminating waste/cost and process variation in manufacturing and upstream processes.

### Celestica TPS Layers & Features

**Tier 1: Cell Start up Level (Daily Cadence)**

**Tier 2: Product Level**

**Tier 3: Team Leader Level**

**Tier 4: Market Level/Executive Oversight**

- Accountability boards
- Defined escalation PDCA
- Gemba Walk - Regular site-wide review focused on employee engagement by site leadership

## Celestica TPS Expectations

### EXPECTATIONS

**Self-Directed:** Build self-directed team initiatives; learning and framing the conversation; communicating expectations down to the individual

**Simplification:** Standardizing KPI's and metrics, reducing meetings and empowering the teams at the cell

**Lean:** Building a framework of interaction and real-time continuous improvement

**Performance:** Improving Safety, Quality, Delivery, Cost, Inventory and People, for our business and for our customers

### OUTCOMES

- ✓ Visual Factory
- ✓ Standardizes language globally
- ✓ Drives collaboration and simplification
- ✓ Management by exception
- ✓ Empowers employees
- ✓ Improves performance and visibility
- ✓ Accelerates operational excellence
- ✓ Decreases time spent in meetings

### QUALITY



Metric	Goal	Actual (Yesterday)	Actual (MTD)
Escapes	0	0	1
Scrap \$	\$30	\$5k	\$25k
NC Tags	2	1	30

Goal Met

Problem - Action Noted

Daily Goal based on CODE

Number of actual tags less than or equal to daily goal



## World Class Transformation

# Driving Value and Continuous Improvement

As a member of our Preferred Supplier Program, Celestica Supply Chain Management will work with you to share industry-leading tools to help us all become more efficient and effective in our day-to-day operations.

## Sales, Inventory and Operations Planning (SIOP)

A structured planning process designed to achieve focus, alignment and synchronization between all functions of our organization, including Sales, Finance, Manufacturing and Procurement /Supply Chain. SIOP is a continuous process rather than a fixed planning cycle and enables us to effectively manage:

- Material orders
- Optimized inventory
- Order commitments and forecasting
- Response time and flexibility KPI's
- Customer demand with supply chain capacity
- Cash flow in our business

SIOP provides Celestica with the ability to maximize flexibility in changing conditions.

This, in turn, allows us to drive and sustain high levels of service and customer satisfaction.

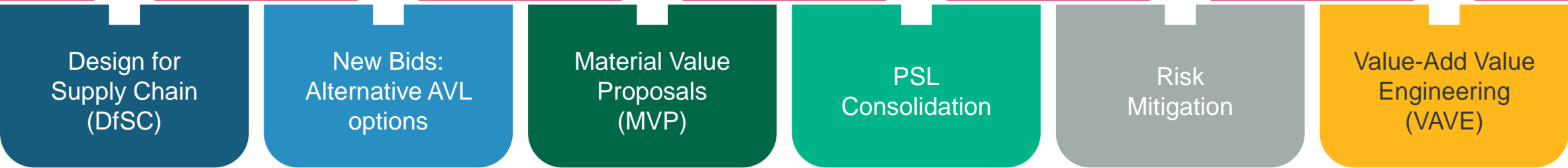
**Celestica actively engages Preferred Suppliers in operational performance**

# Driving Value and Continuous Improvement

**GOAL:**

Create a collaborative environment leveraging supplier expertise to drive value creation, risk mitigation, and supply chain differentiation.

## CELESTICA'S CUSTOMER VALUE CREATION MODEL



**Celestica as a Significant Demand Creator**

- Celestica design-in Preferred Suppliers on new designs
- Engage in Dfx to reduce costs and risk

**New Business Growth**

- Timely/competitive quotes to achieve end customer cost target
- Offer alternate options and tradeoffs to incumbent AVL

**Supply Chain Productivity**

- Support Celestica Solutions Team to gain customer approvals
- Provide creative solutions to enable acceptable ROIs

**Commodity Strategy**

- Consolidate Celestica spend into Preferred Supplier List (PSL)
- Localization, dual sourcing, and Total Cost of Ownership

**Risk Assessment and Mitigation**

- Risk assessment and mitigation solutions “plan for every part”
- Quarterly Business Review and growth alignment

**Continuous Improvement**

- Proactively offer VAVE/ design change options to Celestica
- Participate in product tear-down workshops with end customers

# Driving Value and Continuous Improvement

## Supplier Engagement Model

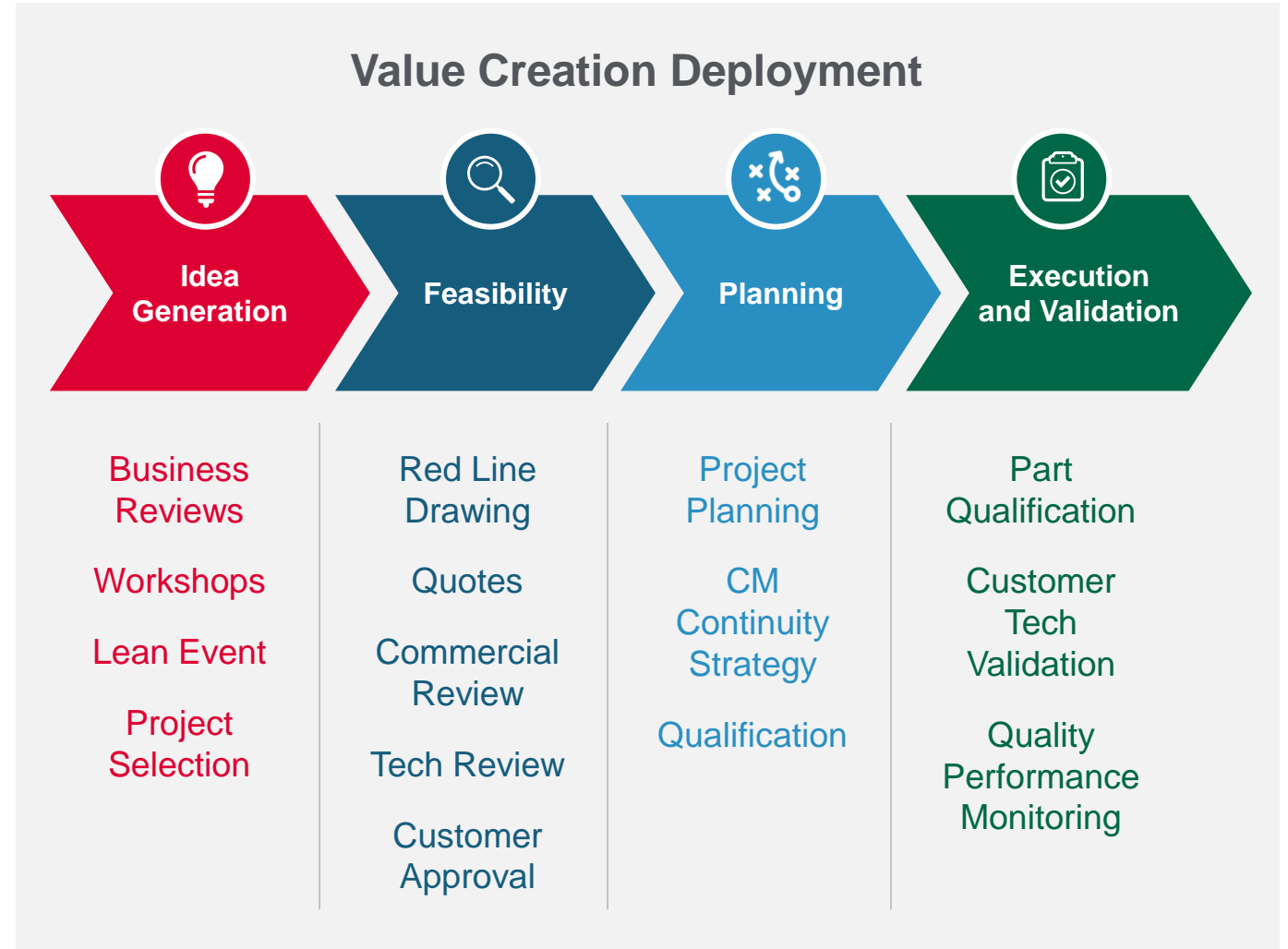
### Have an Idea?

There are many opportunities to communicate your ideas to your Celestica Commodity Manager, Global Commodity Engineer, or requestor.

- As part of New Product Implementation
- During Supplier Business Reviews
- At Value Creation Workshops or Lean Manufacturing Events
- At any time by notifying your Celestica Commodity Manager or Global Commodity Engineer

### Unsure of How to Communicate it?

- Provide redline drawings, pictures and description, etc.
- Internal DfX reports, software tool sets, new quote



# Driving Value and Continuous Improvement

## Value-Add Value Engineering (VAVE)

### Value Engineering



**Multiple locations providing Product Design Services including VAVE and Engineering Change Management**

#### Incentive Alignment

- Material Cost Reductions and Consolidation
- Potential Direct Labor and/or Manufacturing Step Reductions
- Internal Efficiency Improvements
- Feature and Technology Enhancements

### Value Creation Tools



- Six Sigma
- Heat Mapping
- Kaizen
- Lean
- Moldflow Analysis
- The 8 Wastes
- Value Stream Mapping

### Value Creation Ideas



- Soft to Hard Tooling conversion
- Machining to Casting conversion
- 3D Printing to Injection Molding Conversion
- Tolerance Studies
- Alternate Secondary Processors
- Design for Assembly

By applying best practice tools, we can identify opportunities to apply alternative dimensions, tolerances, technology or materials.

Also, Value Stream Mapping can be used to reduce the number of process steps or eliminate bottlenecks.

**As a key supplier to Celestica, we will engage with you and you will be part of an evolving process to optimize our world class supply chain and value proposition.**

# Supplier Excellence Awards Program

**Supplier performance is fundamental to Celestica's success. The Celestica Supplier Excellence Awards is our program to recognize suppliers who achieve the highest performance standards, which are critical to meeting customer expectations and remaining competitive in the global economy.**

## Aims of our Supplier Excellence Program

- Recognize our mission critical suppliers
- Better engagement and communication
- Rewards top performers who contribute to our business success
- Annual Summit with key suppliers, an opportunity to collaborate in person or remotely

## The Initial Award Portfolio

**Performance Excellence Award** - Top Performing supplier in all of Celestica; significant contributor in Value, Quality, Service, Collaboration, Diversity and Sustainability.

**Outstanding Support Award** – A supplier who is a key collaborator and has provided outstanding support to Celestica, beyond expectations. The collaboration has had measurable impact on developing new business.

**Sustainability Award** - A supplier that is leading the way in driving sustainability initiatives, with a positive impact for Celestica.

**Most Improved Supplier Award** - A supplier who has embraced problem solving in the areas of Quality, Delivery or Cost, and who has demonstrated outstanding improvement in overall performance.

**Top Innovator Award** – A supplier who is embracing cutting-edge technology to support Celestica or who has re-engineered processes to drive improvement and VAVE on product supplied to Celestica.

**Actively engaging Celestica Preferred Suppliers in operational performance**



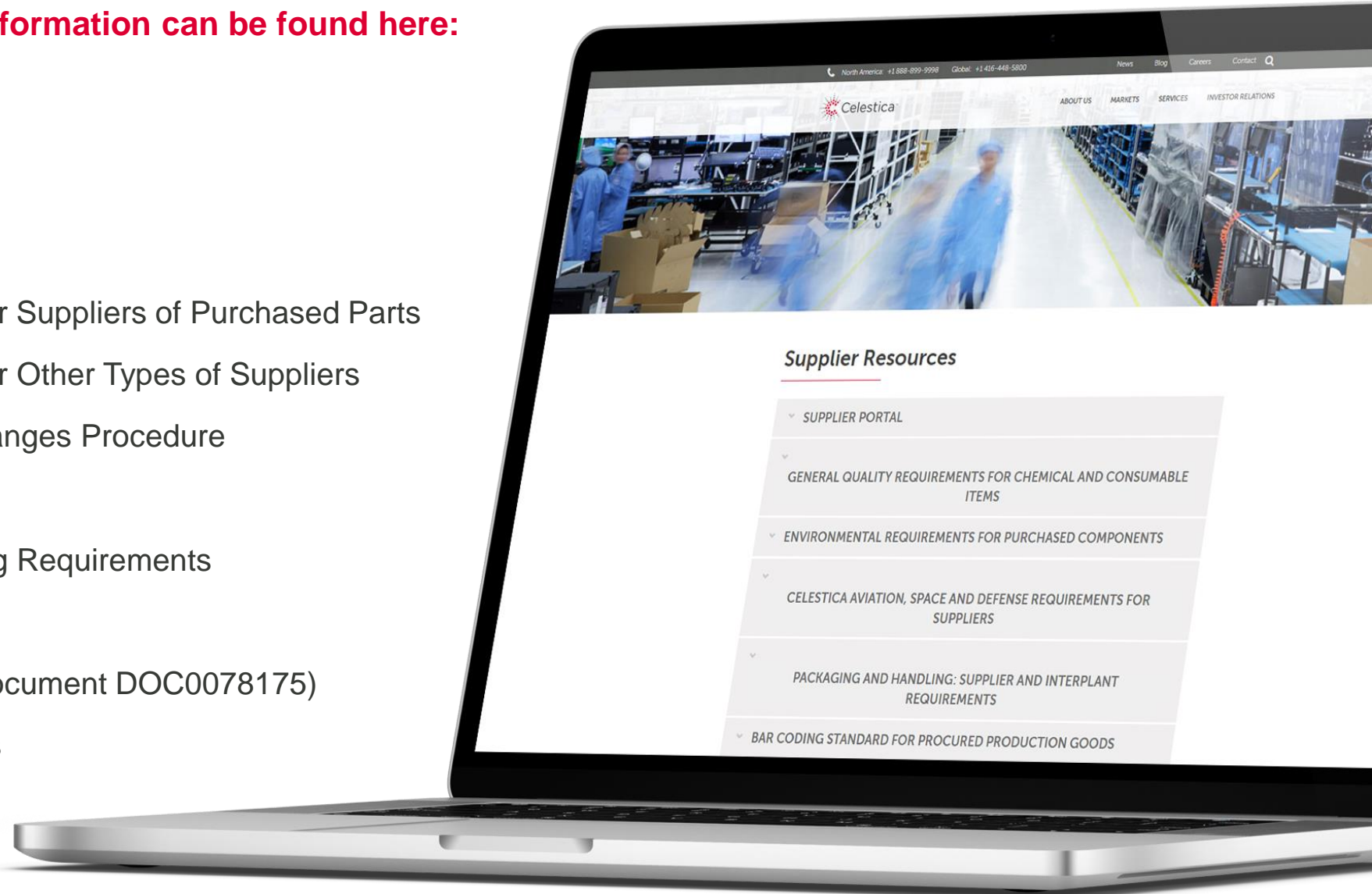
# Where do I go to find information about supplying Celestica?

The main repository for supplier information can be found here:

<https://www.celestica.com/suppliers>

## Supplier Resources include:

- Supplier Portal Access
- Celestica General Requirements for Suppliers of Purchased Parts
- Celestica General Requirements for Other Types of Suppliers
- Notification of Product/Process Changes Procedure
- Environmental Requirements
- Packaging, Barcoding and Handling Requirements
- Various Quality Specifications
- Conflict Minerals Requirements (Document DOC0078175)
- US Government Order Flow Downs
- US Tax Forms



# Thank You

