

Supplier Development

-

The Practical Path To A Better Supply Chain

About Cambrian Lab

Mission: To Provide Practical and Effective Solutions for Supply Chain Excellence

Team

Supply Chain, New Product Introduction, and Technology Experts from SAP, Samsung, Siemens, GM, Ford, Applied Materials

Industries

Automotive, High-tech, Semiconductor Equipment, Medical Devices, Consumer Products
(From Fortune 100 to Start-ups)

Locations

SF Bay Area, Detroit, Boston, Houston, Hyderabad

Expertise

- New Product Development/Introduction, Supplier Development and Quality Management
- Enterprise and Supply Chain Technology (ERP, SCM, Manufacturing, CRM, Sourcing, Finance)

Panelists

Kris Gorrepati

Product Management

Cambrian Lab

Manish Mathur

VP of Engineering

Cambrian Lab

Our Work with Different Industry Customers

Embedded Systems, Memory and HPC Computing Systems Manufacturer

Product Engineering, Component
Engineering, Sustaining Engineering

Global Industrial Manufacturer

New Product Introduction

Tier 1 Global Automotive Supplier

Product Release, PPAP, Design
Quality..

Global Network Equipment Manufacturer

Supplier Development and
Collaboration

Global CPG Company

Supplier Collaboration Portal

Supplier Development Has Never Been More Important

- Increased Need for Global and Local Supply Chains
- Know Your Supply Chain
- Better and Closer Supplier Relationships
- Different Inventory Strategy (in some cases)
- Increased Need for Cross-functional and Supplier Collaboration
- Plan, Design and Test alternatives

The New Supply Chain

More Suppliers

Better Suppliers

Closer Supplier Relationships

Your Supply Chain Team



Strategic Value of Supplier Development



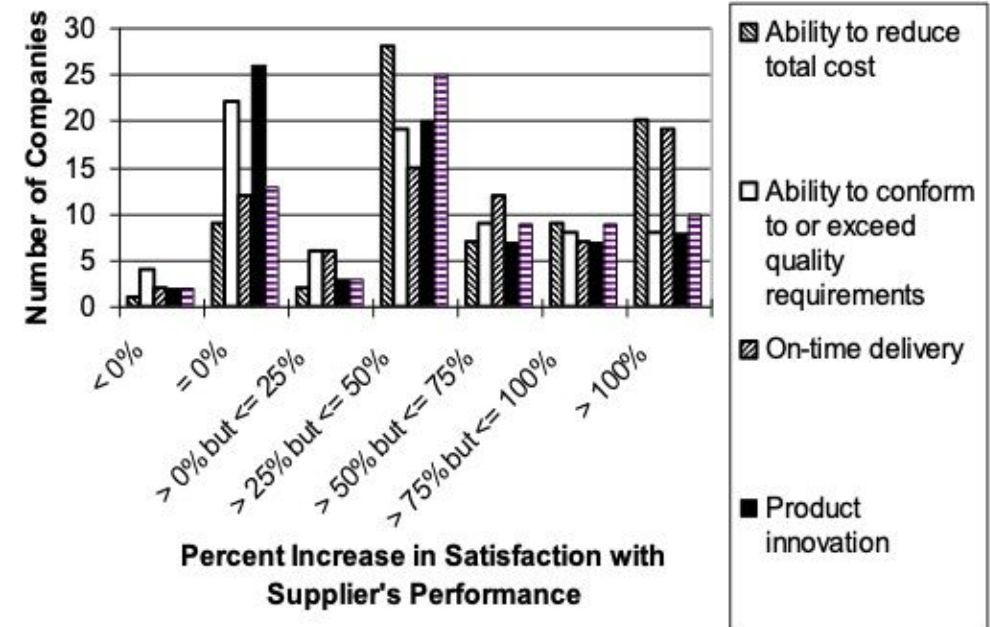
The Business Case for Supplier Development

Figure 2 - Supplier Development Results

Krause, 1997, Survey of 527 firms
Respondents: NAPM members

<i>Criteria</i>	Before Supplier Development	After Supplier Development
Incoming defects	11.65 %	5.45 %
% on-time delivery	79.85 %	91.02 %
Cycle time (from order placement to receipt)	35.74 days	23.44 days
% orders received complete	85.47 %	93.33 %

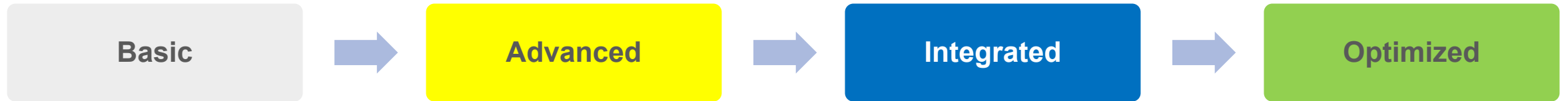
Figure 3 - Satisfaction



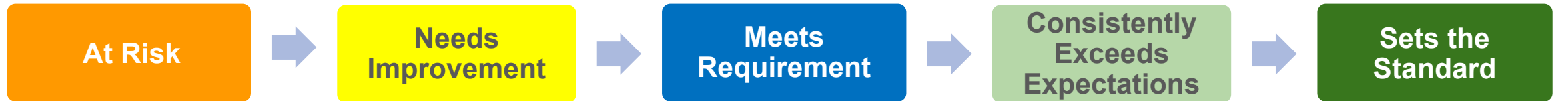
Source: Executive report of key results of recent research on supplier development strategies and outcomes – Dr. Robert Handfield

Focus of Supplier Development is Improvement

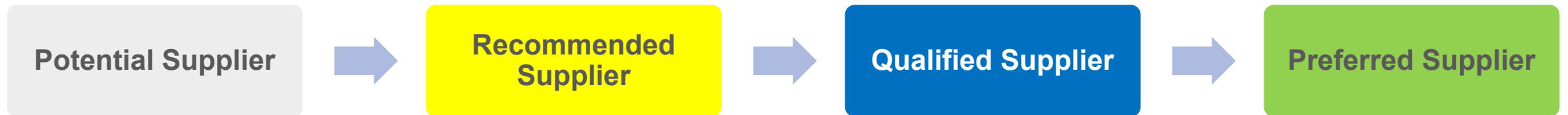
Supplier Capability



Supplier Performance

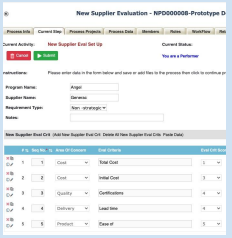


Supplier Relationship



Supplier Development

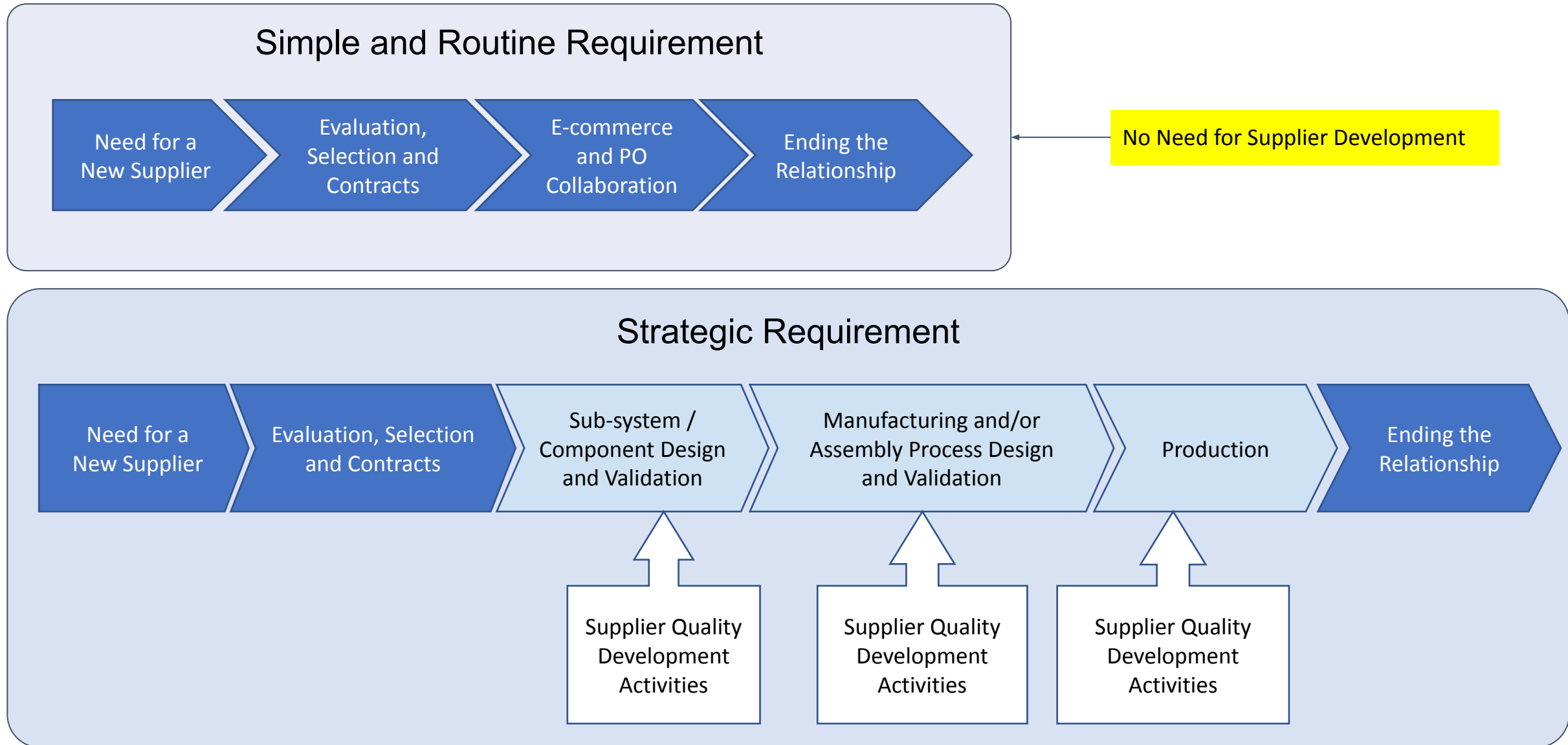
Evaluation, Audit and Performance Assessment



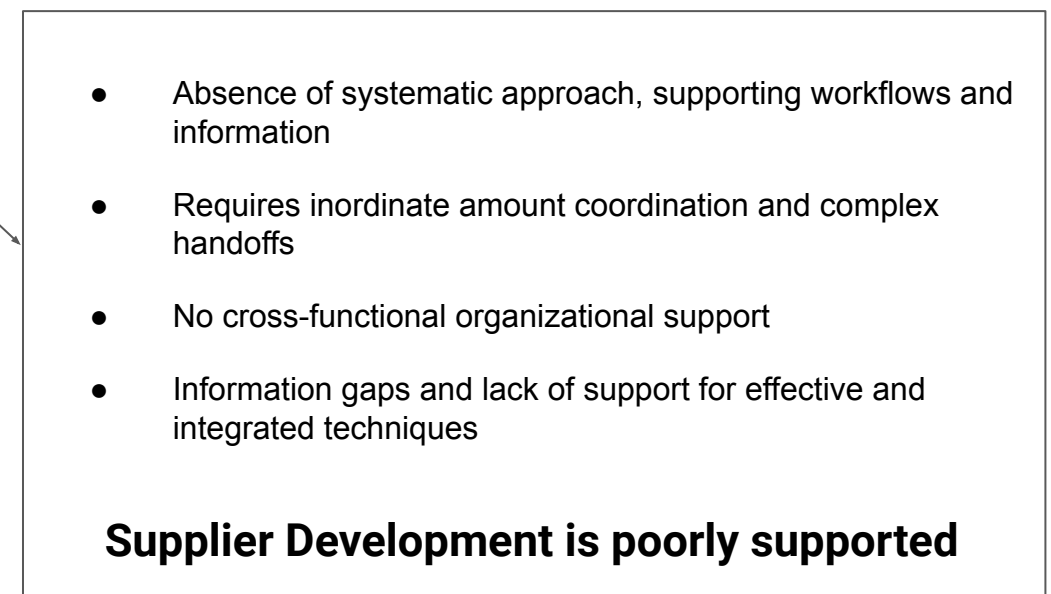
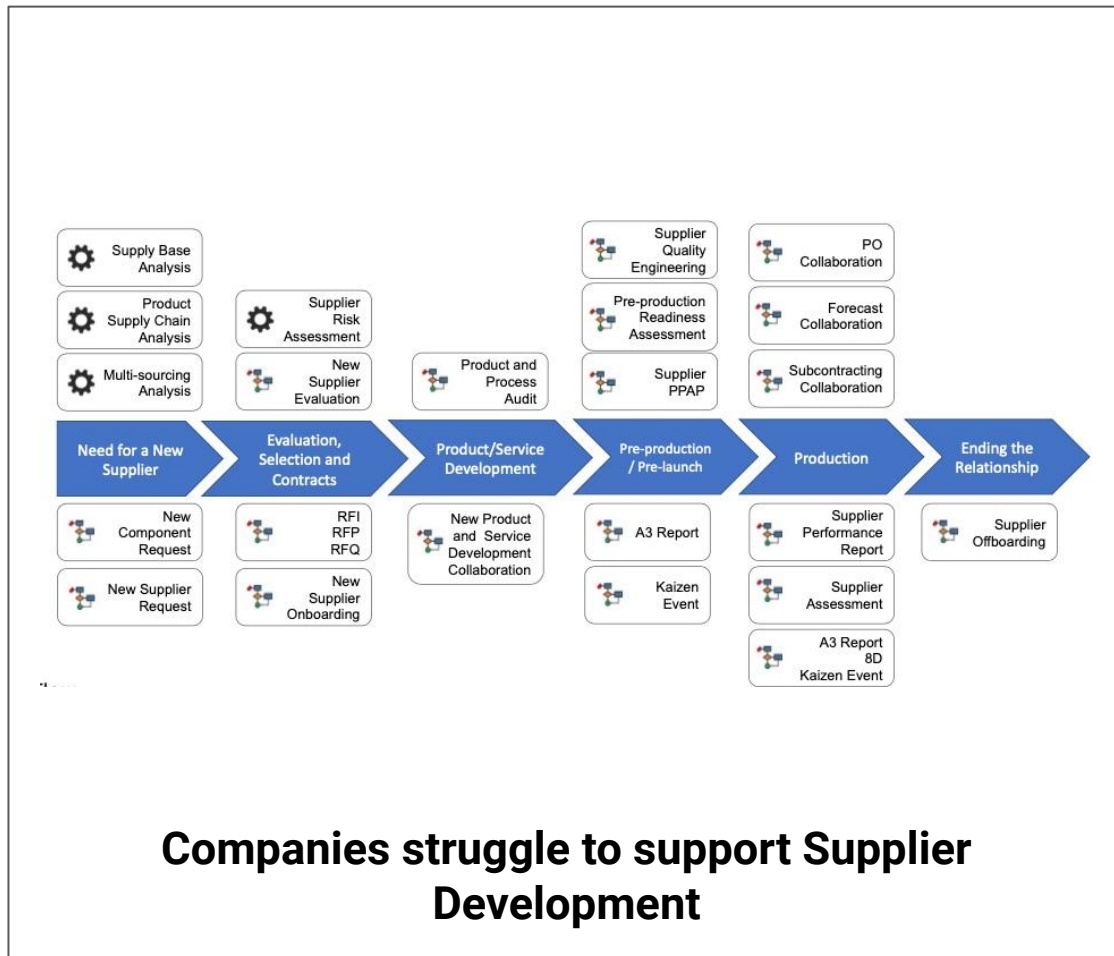
Capability	Area	Performance Criteria	Question	Program	Weighting Factor	Score	WOCS
Quality	Yield	Yield during startup	How long did it take to hit the target yield	ModelZ	0.00000	9	0
				ModelY	0.00000	9	0
	Defects	Number of Defects	Number of observed defects	ModelZ	0.00000	9	0
				ModelY	0.00000	9	0
Product Technology	Hardware	Fit and Finish	Panel gaps	ModelZ	0.00000	7	0
				ModelX	0.00000	7	0
Process Technology	Process Stability	Throughput	How long did it take to hit the target	ModelZ	0.00000	9	0
				ModelX	0.00000	9	0
Cost	Initial Cost	Initial Cost	What is the initial cost	ModelZ	0.00000	8	0
				ModelY	0.00000	7	0
				ModelX	0.00000	7	0



Different Levels of Supplier Development for Different Requirements

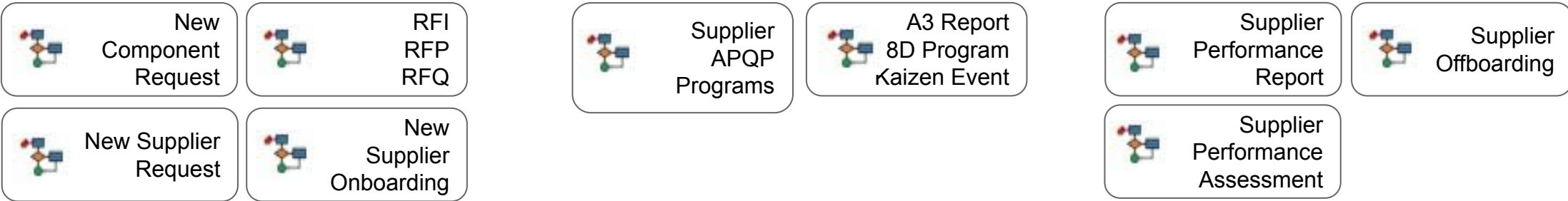
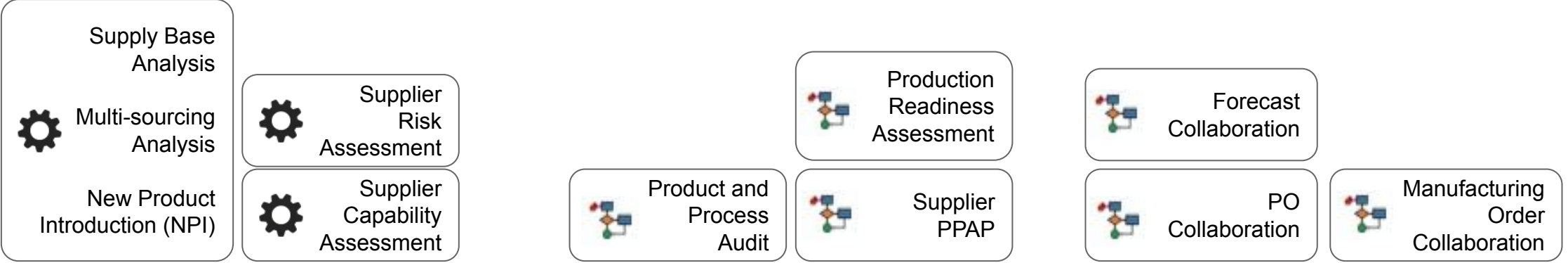


Supplier Development is Usually not a Systematic Process nor Supported Well



Supplier Development with ZFlow

Making Supplier Development Systematic and Simple



Supplier Quality Engineering and Continuous Improvement



ZFlow – Digital Workflow for the Modern Supply Chain

Systematic approach
(framework and workflows)
to Supplier Development

Out-of-the-box Integration to
ERP, Sourcing, PLM, Supply
Chain systems

Zero-code



Cross-functional - Involves
Right People at the Right
Time

Supply Chain Ready

Integrated and effective
assessments

Easy and Secure Cross-functional Engagement with Existing and Prospective Suppliers


Supplier Development Portal
Digital Workflow for the Modern Supply Chain

English ▾


Email Address
kris.gorrepati@cambrianlab.net

Password
Enter password

Remember me [Forgot Password?](#)

[Login](#)

[Sign in with Microsoft](#)

 [Supplier Launch Pad](#) [Group Home](#) [Manage Users](#) Kris Gorrepati ▾

Supplier Portal

Account Management

- Manage Profile
- Add Supplier Profile
- Submit Profile Change

Performance Reporting

- Performance Reports
- Supplier Performance

Supplier Development

- NPI Review
- RFP Response
- RFQ Response
- Supplier Audit

Supplier Collaboration

- Supplier Initiated PPAP
- Supplier PPAP
- Forecast Collaboration
- Purchase Order Collaboration
- Subcontract Purchase Order
- Supplier Batch Manufacturing Record

Existing Supply Base, New Product Introduction (NPI) Sourcing and Multi-sourcing Assessments

Supplier Risk Assessment - Intel Intel

Part Number: A10X
Part Description: A10X SOC
Manufacturing Plant: Portland

#	Seq No.	Risk Category	Risk Subcategory	Weight	Score	Rating	
1	1	Quality		60.00	3	69.00	
	#	Seq No.	Risk Category	Risk Subcategory	Weight	Score	Rating
	1	1	Quality	Defects per million	30.00	3	33.00
	2	2	Quality	Ease of problem resolution	25.00	2	18.00
	3	3	Quality	Product complexity	15.00	4	22.00
	4	4	Quality	Timeliness of corrective action	25.00	2	18.00
	5	5	Quality	Value of product	5.00	4	7.00
	#	Period			Score		
2	2		Disruption		40.00	2	31.00
3	3		Procurement		0.00	0	0.00
4	4		Inventory		0.00	0	0.00
5	5		Intellectual Property		0.00	0	0.00

Part Number	Source	Supplier Name	Supplier Relationship Status	Supplier Maturity Level
ZPhoneX	ExternalManufacturing			
User Interface	ExternalSource			
Cameras	ExternalSource	LG Innotek	Preferred	Integrated
Mechanical	ExternalManufacturing			
A10X	ExternalSource	Intel	Preferred	
Memory	ExternalManufacturing	Micron	Preferred	Integrated
Power Management	ExternalSource			
Communications-module	ExternalManufacturing			
Display	ExternalSource	Huizhou Desay	Qualified	
Glue Logic	InternalSource			
Electromechanicals	ExternalSource			
Battery	ExternalSource	Honcell	Qualified	Basic
Box Contents	ExternalManufacturing			
Cameras	ExternalSource			
Camera-Lens	ExternalSource	Yujingguang Kantatsu Largan	Qualified Qualified Qualified	Basic Advanced Advanced
Communications-module	ExternalManufacturing			
GN-Receiver	Procured	Qorvo	Qualified	
Baseband	Procured	Skyworks Broadcom	Preferred Preferred	
BT-WLAN-Module	Procured	Broadcom	Preferred	
BT-GNSS-Frontend	ExternalSource	Broadcom	Preferred	
RF Frontend	Procured	Analog	Active	Advanced
RF Transceiver	Procured	Qualcomm	Qualified	
RF Frontend	Procured			
Envelope Tracking IC	Procured	Texas Instruments	Preferred	Integrated

ZFlow-Digital Workflow for the Modern Supply Chain

View site information //zflow/nui/main.jsp?external_win=true&link=.../servlet/zapp%3Fcommand%3Dview%26cls%3DProductSupplyChainRiskAnalysis%26scope%3DR...

Product Supply Chain Risk Analysis - ZPhoneX

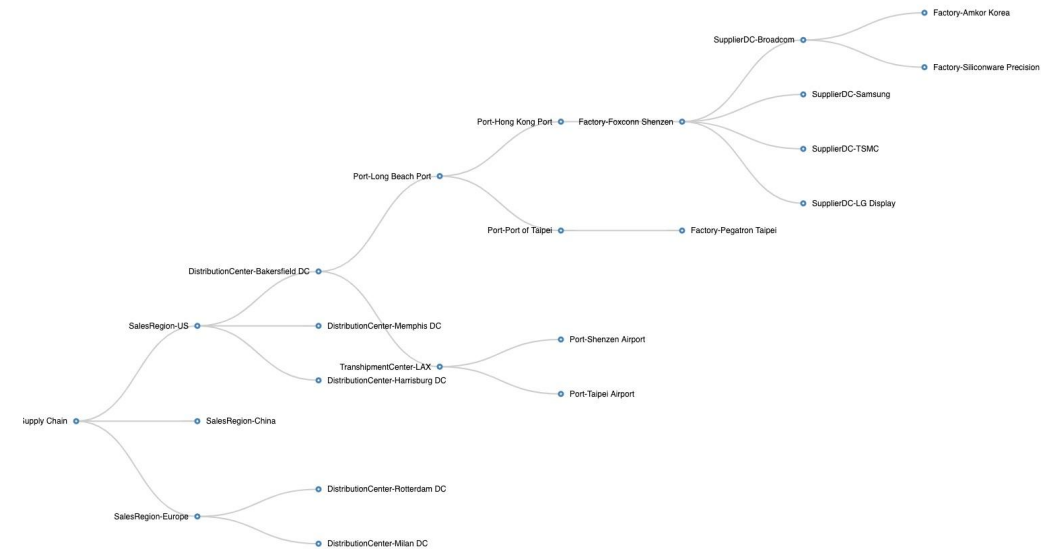
App ID: PSRA00001

Part Info
Part Number: ZPhoneX Part Name: ZPhoneX

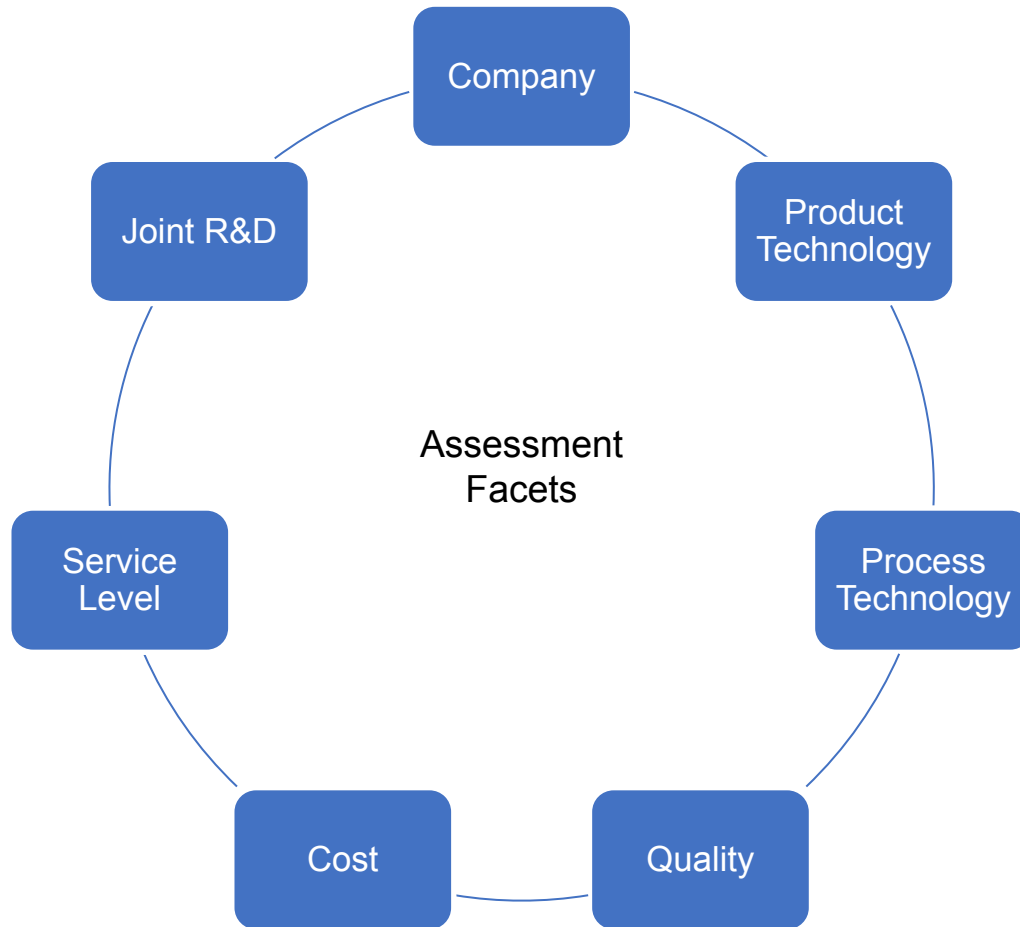
Sourcing Risk
Overall Sourcing Risk: Low
Single Sourcing Risk: Low
Component Availability Risk: Low
End Of Life Risk: Low

Sourcing Risk Details
Components with Single Sourcing Risk: 5
Percentage of Components with Single Sourcing Risk: 10.00000
Components with Availability Risk:
Percentage of Components with Availability Risk:
Components with EOL Risk: 3
Percentage of Component with EOL Risk: 5.00000

Supplier Risk
Supplier Quality Risk:
Supplier SLA Risk:
Supplier Stability Risk:
Supplier Capability Risk:



Evaluating and Selecting New Suppliers



New Supplier Evaluation - NPD000008-Prototype D

Process Info | Current Step | Process Projects | Process Data | Members | Roles | WorkFlow | Reli

Current Activity: **New Supplier Eval Set Up** | Current Status: **You are a Pe**

Cancel | Submit

Instructions: Please enter data in the form below and save or add files to the process th

Program Name:

Supplier Name:

Requirement Type:

Notes:

New Supplier Eval Crit (Add New Supplier Eval Crit Delete All New Supplier Eval Crits Paste Data)

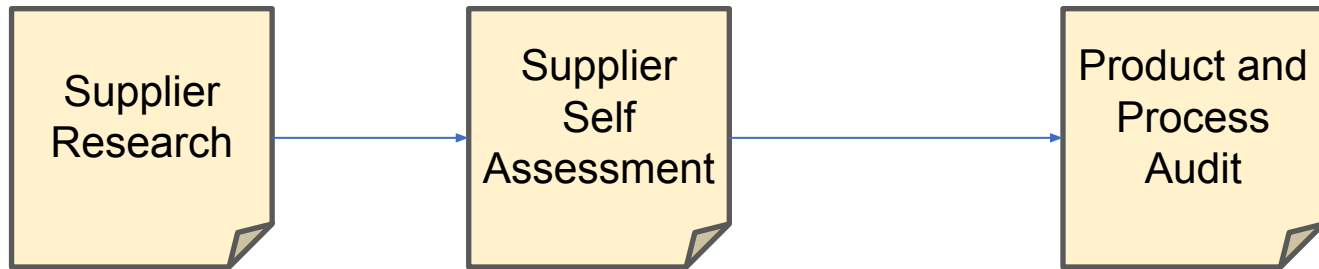
#	Seq No.	Area Of Concern	Eval Criteria
1	1	Cost	Total Cost
2	2	Cost	Initial Cost
3			
4			
5			

Sourcing Evaluation Report

Sourcing Type: Production Part
Sourcing Category: Strategic
Sourcing details: A10X A10X SOC

Criterion	Buyer's weighting 1=low, 2=medium, 4=high	Degree of fulfillment 1=low, 2=medium, 4=high	
		supplier A	supplier B
Product technology	4	2	4
Process technology	2	4	2
Acquisition and additional costs	2	2	1
Delivery and payment terms	1	2	4
Service level and delivery reliability	4	2	4
Short lead times in flow of goods	2	4	2
Capability for custom production	1	4	2
Capability for joint R&D	2	2	4
Financial stability	4	4	2
Importance of buyer rather low	2	4	1
International support	2	4	2
Total score (number of points)	Max. = 104 (= 26·4)	78	70
100% minus gap	Max. = 100%	75%	67%

Research, Assessment and Audits for Evaluating and Selecting New Suppliers



Supplier Audit - Supplier Audit for Intel - At Supplier

Process Info | Current Step | Process Projects | Process Data | Members | Roles | Workflow | Related Processes | Process Log | Process Graph | Process Report

Current Activity: Review Supplier Response | Current Status: started | You are a Performer | Performers: ZFlow Admin

Instructions: Please review the data in the form below or in the files section then click to continue process

Design control and risk management procedures are established and applied? (ISO 13485:2016: 7.3)	✓
Audit Answer: Yes	
Design and development stages are identified? (ISO 13485:2016: 7.3.2)	✓
Review, verification, validation, and design transfer activities at each stage are appropriate? (ISO 13485:2016: 7.3.2)	✓
Responsibilities for design and development are defined? (ISO 13485:2016: 7.3.2)	✓
Management Controls -	
★ Quality Manual defines scope of QMS, procedures (or reference to) within QMS, and description of the interaction of processes within QMS? (ISO 13485:2016: 4.1, 4.2.2)	✓
★ Firm has established and conducts Management Reviews, at least annually? (ISO 13485:2016: 5.1(d), 5.6)	✓

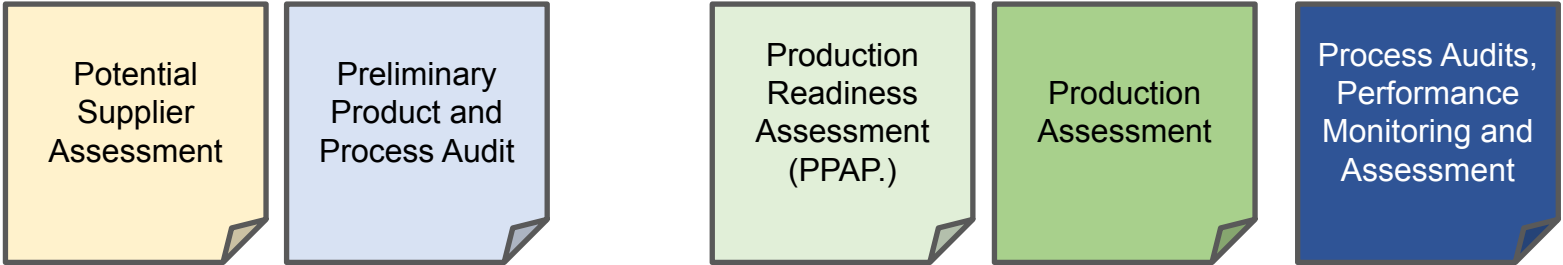
IATF, VDA, ISO 13485..

P2	Project management
2.1	Is the project organisation (project management) established and are tasks & authorities specified for the team leader and team members?
2.2*	Are the resources required for the project development planned and available and are all changes displayed?
2.3	Is there a project plan and has this been agreed with the customer?
2.4	Is change management in the project ensured by the project organisation ?
2.5*	Are the responsible personnel within the organisation and in the customer's company involved in the change control system ?
2.6	Is there a QM plan for the project ? is this implemented and monitored regularly for compliance ?
2.7*	Is there an established escalation process and is this implemented effectively ?
P3	Planning the product and process development
3.1	Are the product and process-specific requirements laid down ?
3.2*	Has manufacturing feasibility been assessed in a cross-functional manner, based on the requirements which have been determined for product & process?
3.3	Are there plans for the product and process development ?
3.4	Have the necessary resources been taken into account for the product and process development ?
3.5	Is QM planning arranged for sourcing bought-in products and services ?

FOOD AND DRUG ADMINISTRATION

GUIDE TO INSPECTIONS OF QUALITY SYSTEMS

Different Evaluation Techniques at Different Stages



Supplier PPAP - SPPAF

Process Info | Current Step | Process Projects | Process Data | Members | Roles | Workflow | P

Current Activity: PPAP Phase 1 Review Current Status: You are a Performer

Instructions: Please review the data in the form below or in the files section then click to continue process

Supplier Name: Initial Fa

Part Number: A10X Pa

Part Description: A10X SOC

Submission Level: Level 3

PPAP Due Date: 2021/06/30

Sup PPAP Check List Item (Add Sup PPAP Check List Item Delete All Sup PPAP Check List Items Paste Data)

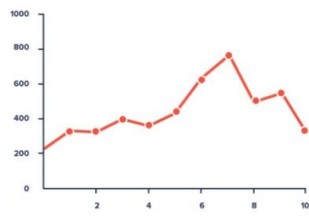
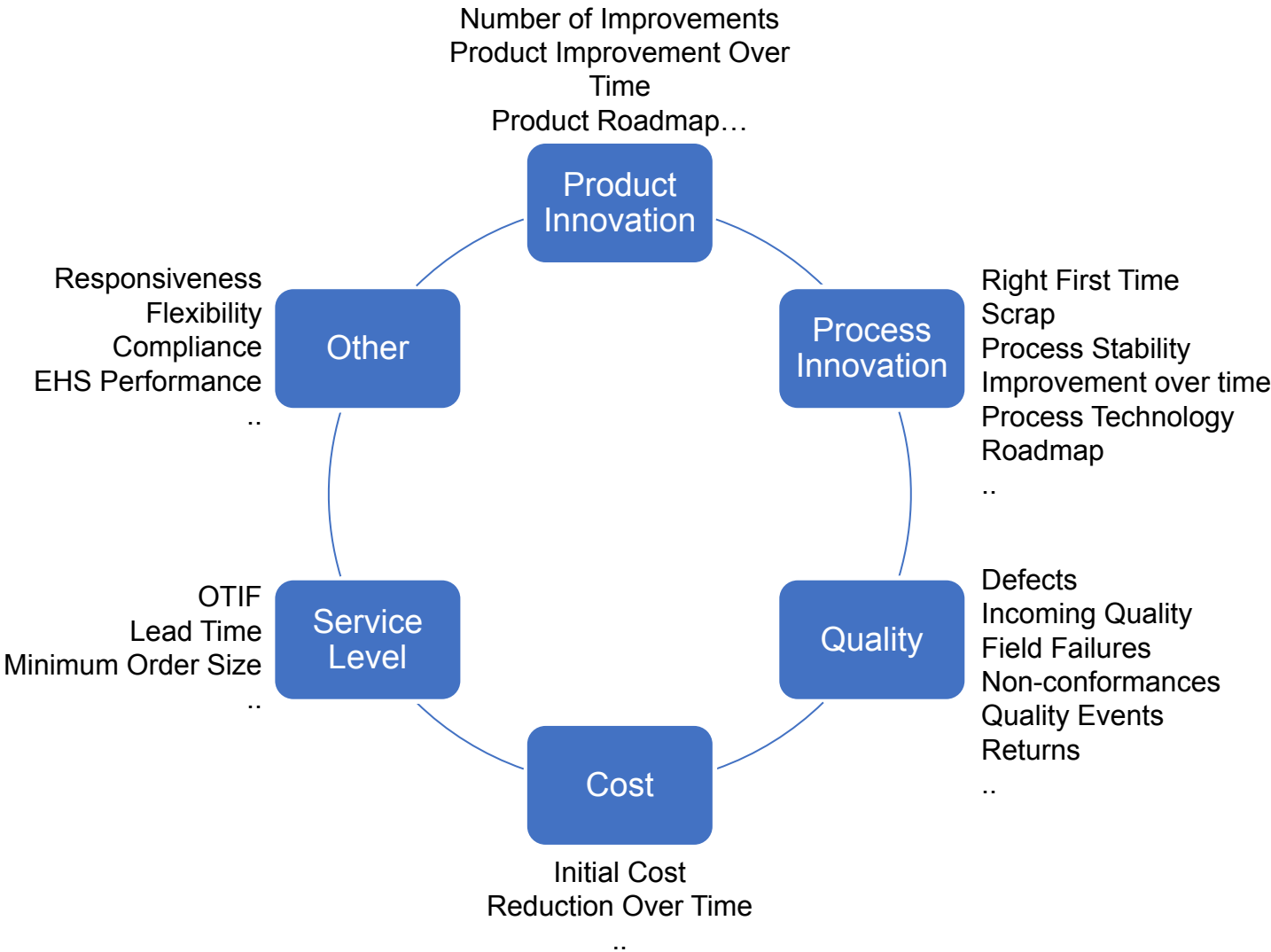
#	Seq No.	Item Name	Item Need	Supplier Comment	Com
1	1	Part Specific Requirement	Required	<input type="text"/>	<input type="checkbox"/>
2	2	Part Submission Warrant	Required	<input type="text"/>	<input type="checkbox"/>
3	3	Design Records	Required	<input type="text"/>	<input type="checkbox"/>
4	4	Design FMEA	Requested	<input type="text"/>	<input type="checkbox"/>
5	5	Process Flow	Required	<input type="text"/>	<input type="checkbox"/>

Supplier Quality Engineering

Key Aspect of Supplier Development



Supplier Performance Reporting and Assessment



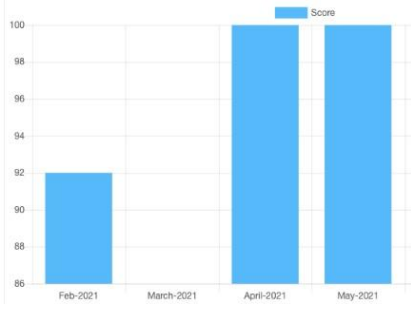
- A3 Report
- 8D
- Kaizen Event

Rating Period July, 2021

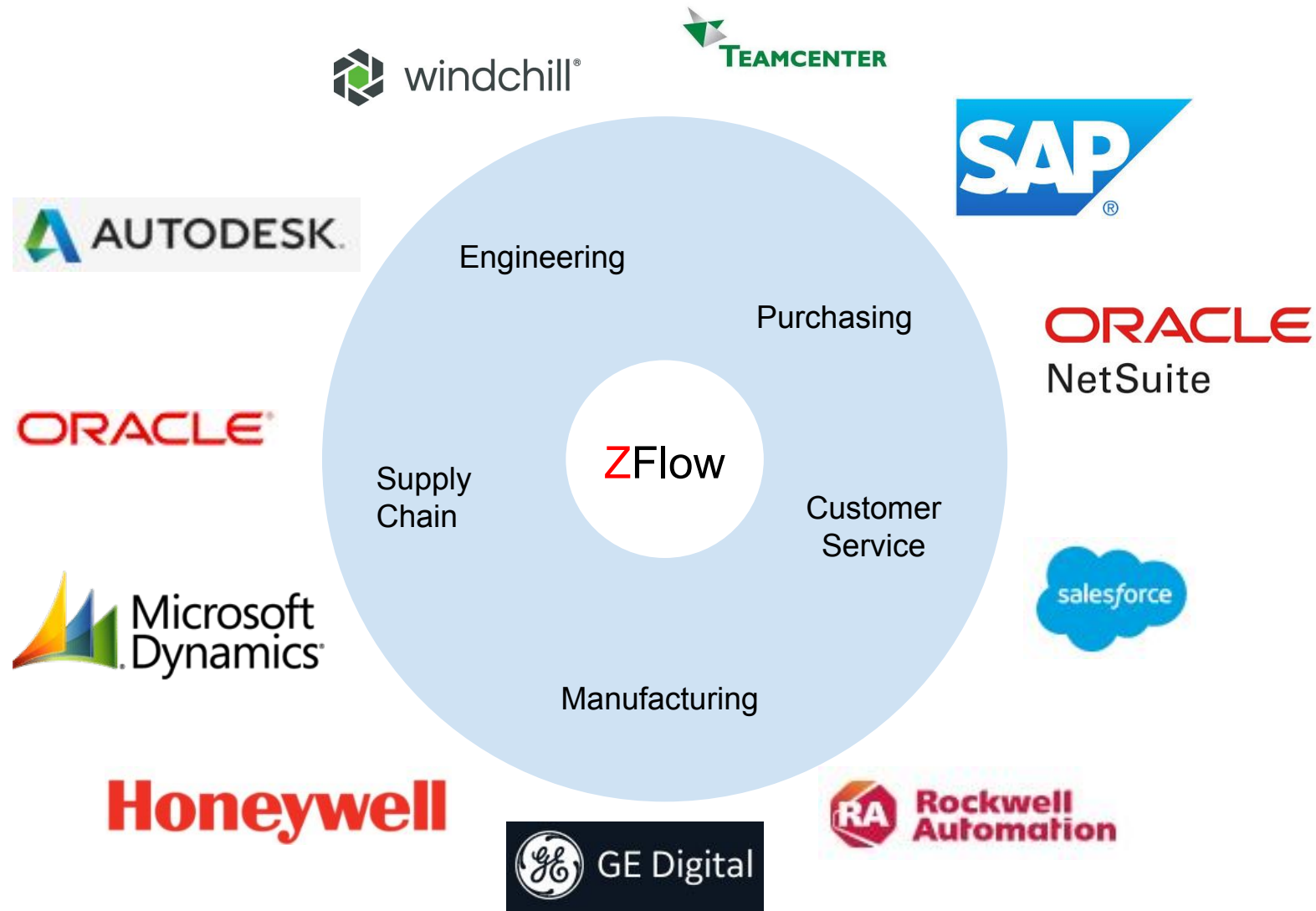
Score	Ranking	Percentile
88	Average	45

Analog of Supply Base Performance

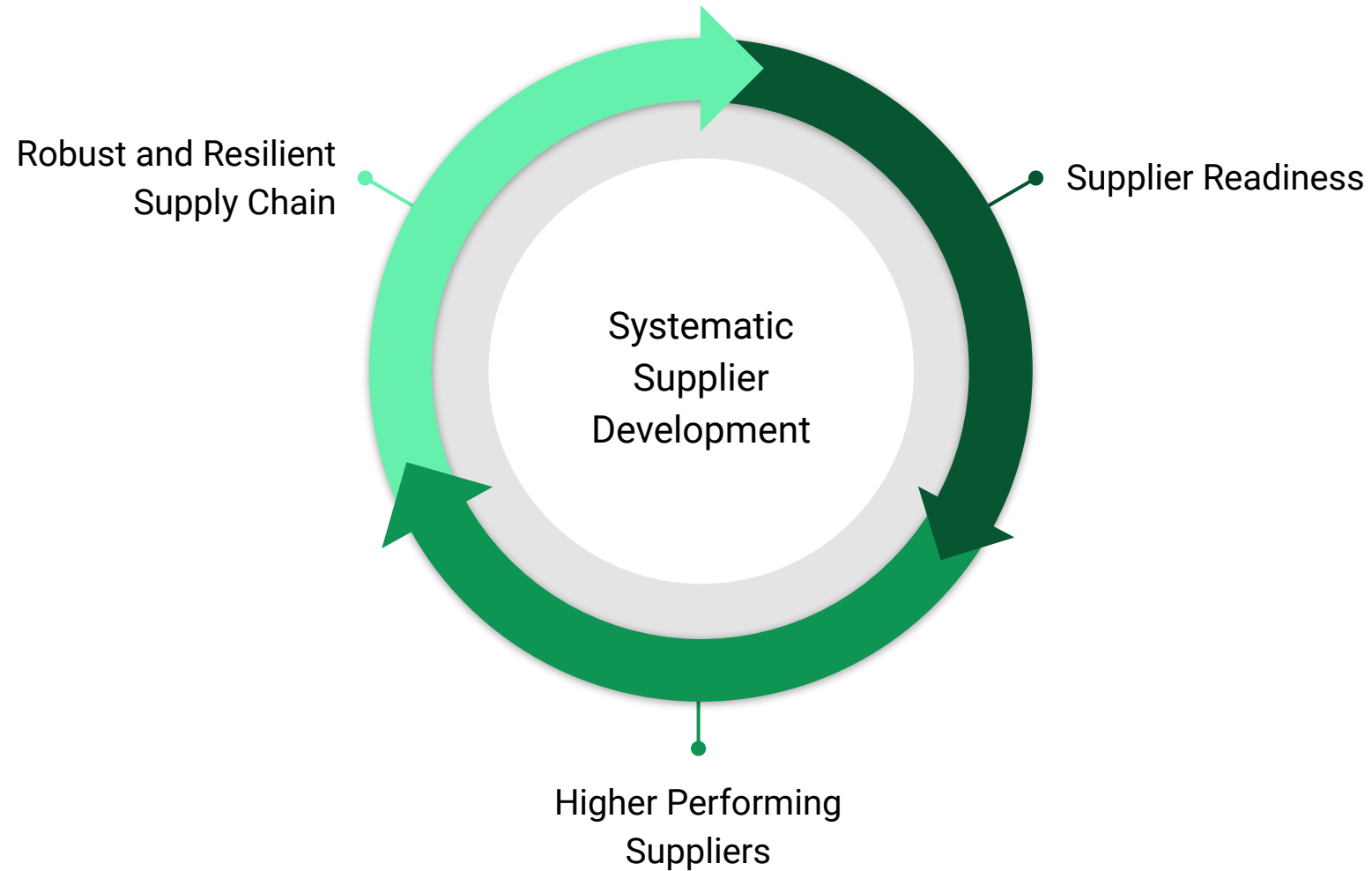
Score	Percentile
100	100
98	90
96	80
94	60
88	40



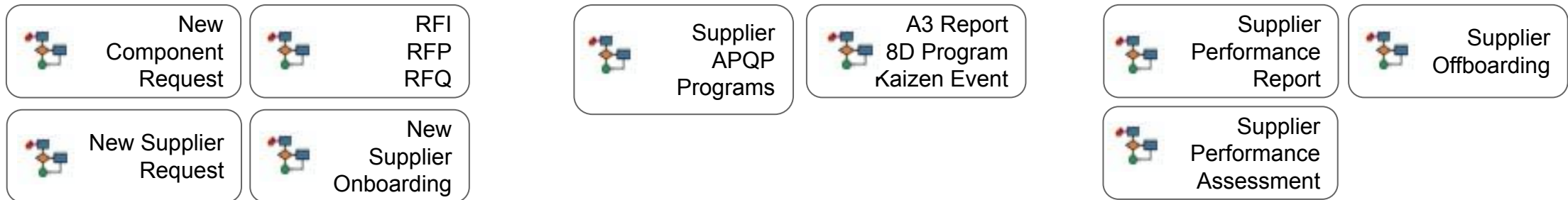
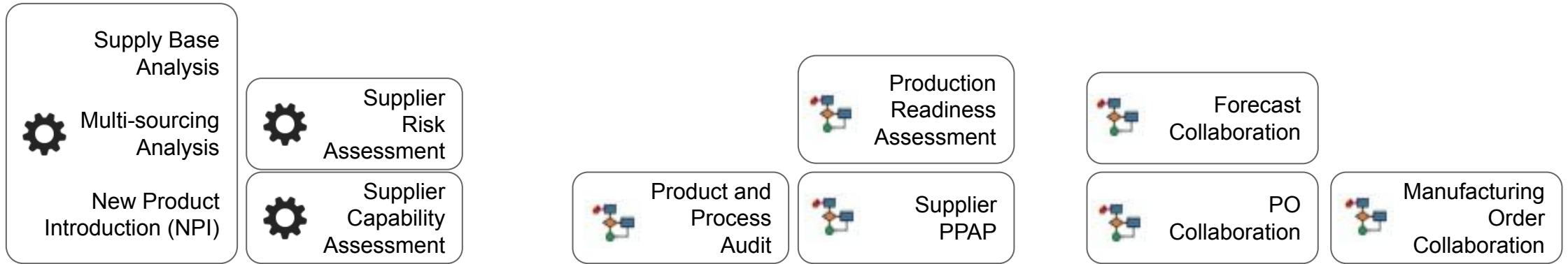
Rich Capabilities for Integrating to ERP, Design, Manufacturing and Supply Chain Applications



3 Reasons for Systematic Supplier Development



Demo



Supplier Quality Engineering and Continuous Improvement



Summary

- ZFlow supports Supplier Development in a holistic manner
- Easy to adopt Internally as well as with the Supply Chain
- Easy to get started

[Test Drive ZFlow](#)

[Free Proof-of-concept](#)

[Free Pilot](#)

More at

<https://www.zflow.io>

