

BRISTLECONE

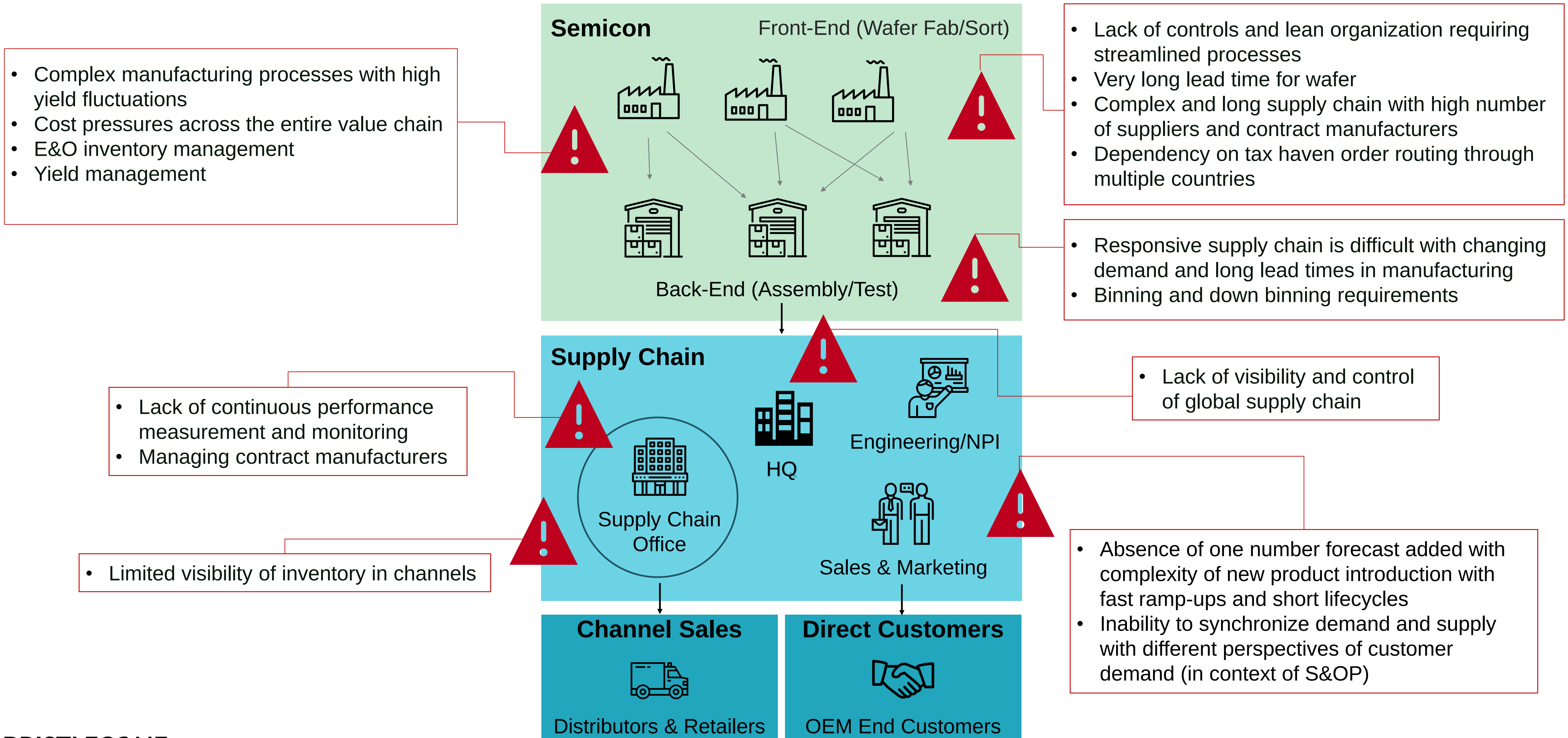
SOLUTION OFFERING – SEMICON INDUSTRY



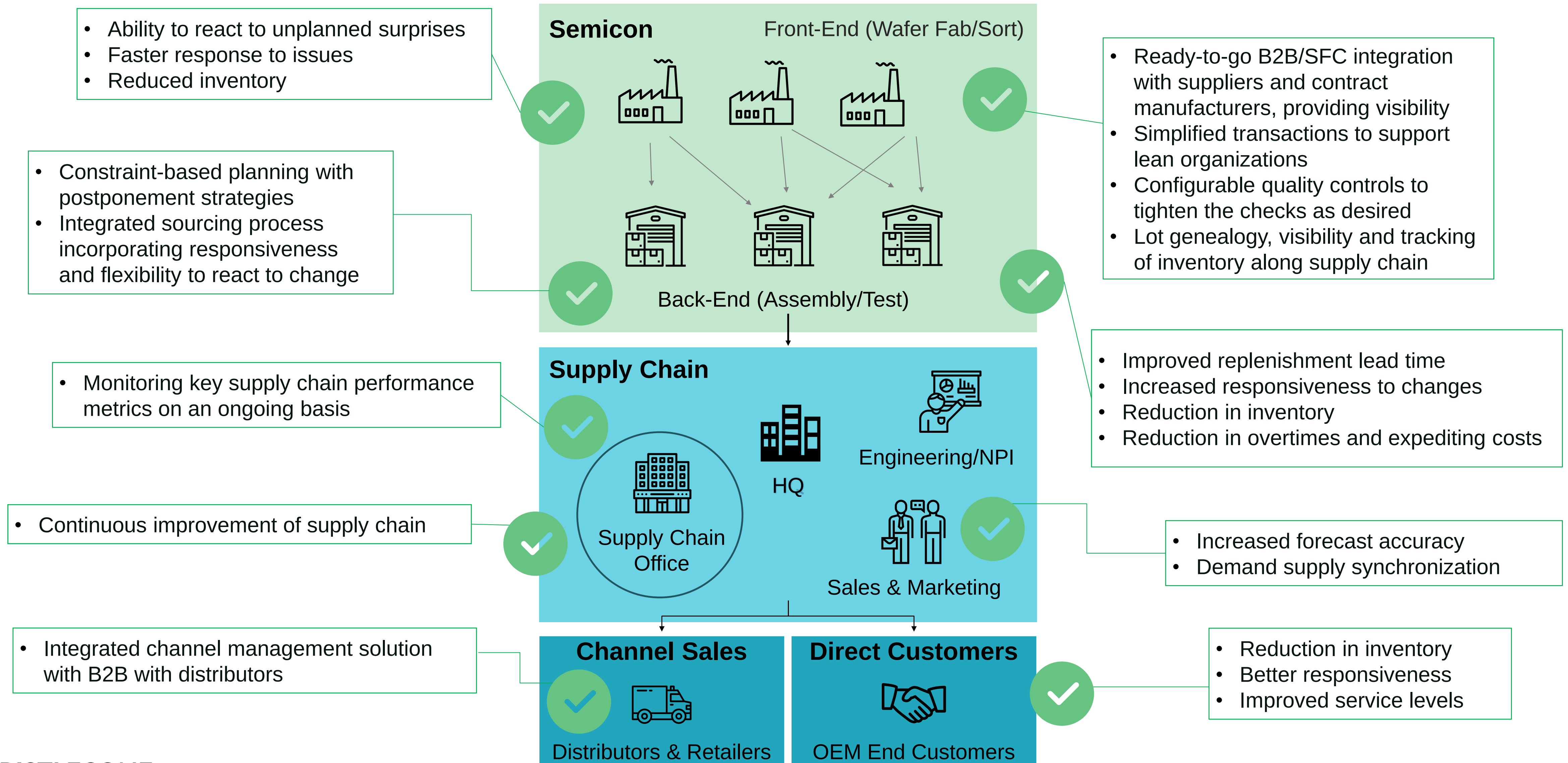


SEMICON INDUSTRY OVERVIEW

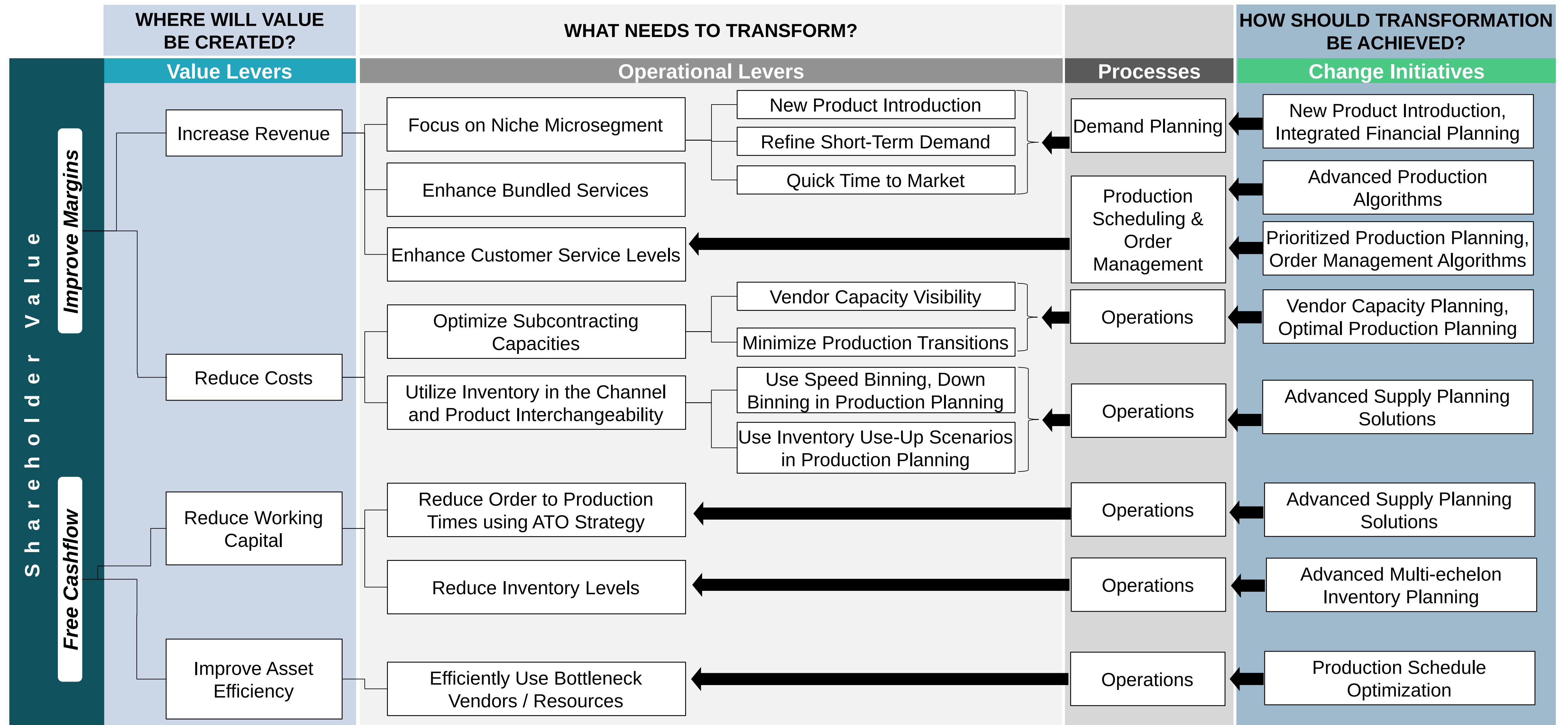
SEMICONDUCTOR INDUSTRY CHALLENGES



SEMICONDUCTOR INDUSTRY BEST PRACTICES



SEMICONDUCTOR INDUSTRY VALUE MAP





BRISTLECONE SAP PLANNING OFFERINGS

REVOLUTIONIZING SUPPLY CHAIN PLANNING IN SEMICON

Best-in-Class Solutions to Tackle the VUCA (Volatility-Uncertainty-Complexity-Ambiguity) World

33%

Digital transformation is a top priority, particularly considering the current pandemic situation

31%

Increased supply chain diversity, including foundry and OSAT

71%

Companies will spend more on R&D

68%

Companies plan to make growth policy as their top priority

Strategic Supply Chain Priorities
for Semicon Organizations

1

Frequent forecast changes by OEMs, penalty clauses on unfulfilled demand and not maintaining safety stocks

ABC/XYZ segmentation, AI/ML-powered forecasting, visibility to various demand inputs

2

Longer lead times for wafers and limited wafer suppliers – limited available capacity at large vendors

Mid to long-term planning, sales and operations planning for better visibility in mid-term horizon

3

Multiple suppliers for back-end operations, managing share of business to each supplier

Supply planning considering multi-sourcing, quotas, source of supply prioritization

4

Rapid technology innovations making product lifecycles very short

Product lifecycle management

5

Demand prioritization – strategic customers and market leaders such as Apple, Samsung, automotive sector, etc.

Priority-based order level planning, time-phased priority segments, gating factor analysis

6

Multi-tier capacity planning and capacity management across multiple contract manufacturers

Constrained supply planning considering various constraints

7

Stranded inventory across supply chain, postponements, MTS, ATO and MTO manufacturing strategies

Inventory use-up, calculating inventory norms scientifically, supply planning considering various manufacturing strategies

8

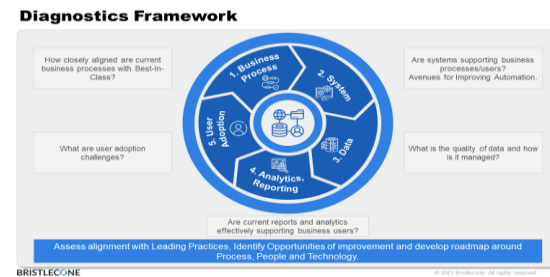
Data-driven decision-making based on financial simulations

Scenario planning and what-if analysis, capability to simulate up to gross margin level through connected financial planning

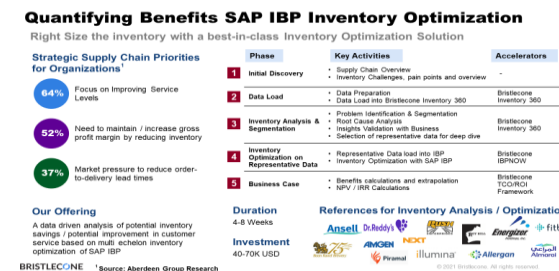
COMPREHENSIVE DEMONSTRATED SEMICON OFFERINGS

Supply Chain Diagnostics and Process Design

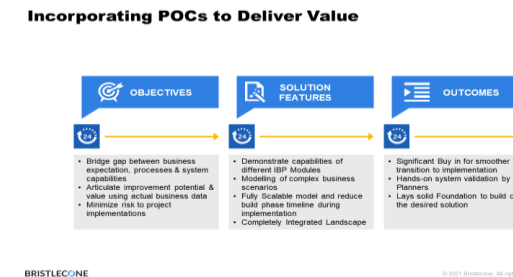
Robust Framework to Diagnose Supply Chain Health



Inventory Analysis for Quantifying Benefits SAP IBP IO



Rapid Prototyping, POCs and Hands-on Experience in Bristlecone Instance



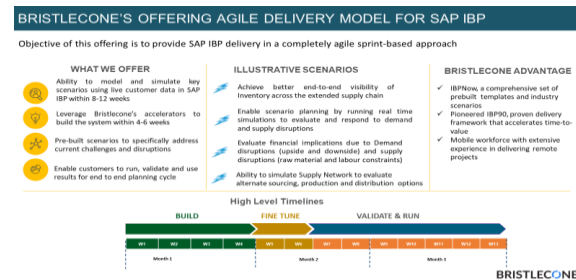
Our Semicon Expertise

100+
High-Tech / Semicon
Planning Engagements
Completed

95%
Client Satisfaction
Score

Seamless Supply Chain Transformation Delivery

Completely Agile Sprint-Based Model for Flexibility and Responsiveness



Comprehensive Supply Chain Transformation using IBPNOW for Semicon



Enhanced Order Fulfilment with Ability to Reprioritize/Improve commits with AATPNOW

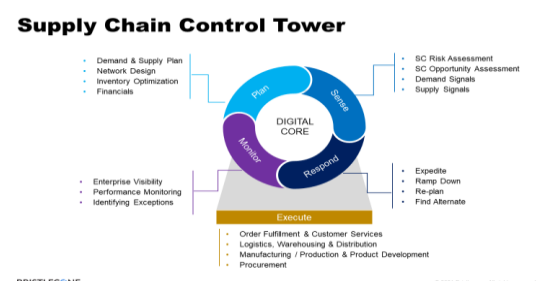


100+
Preconfigured
Scenarios

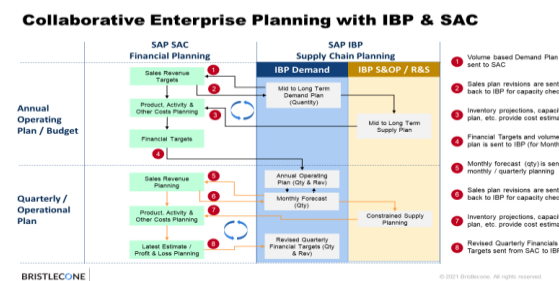
20+
IBP Go-Lives for
High-Tech Industries,
Including Semicon

Sustenance and Continuous Innovation Making Planning More Efficient

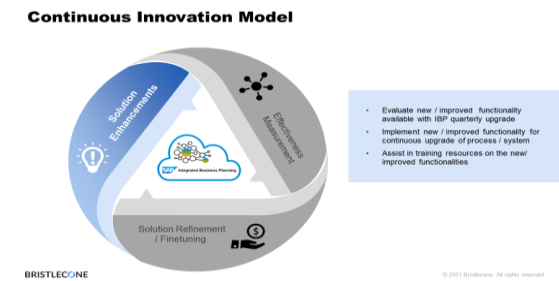
Enabling Control Towers for External Sensing and Enterprise Visibility



Collaborative Enterprise Planning for Gross Margin and P&L Simulations



Continuous Innovation Model for Leveraging Global Learnings and Upgrades



20+
Industry Subject Matter
Experts

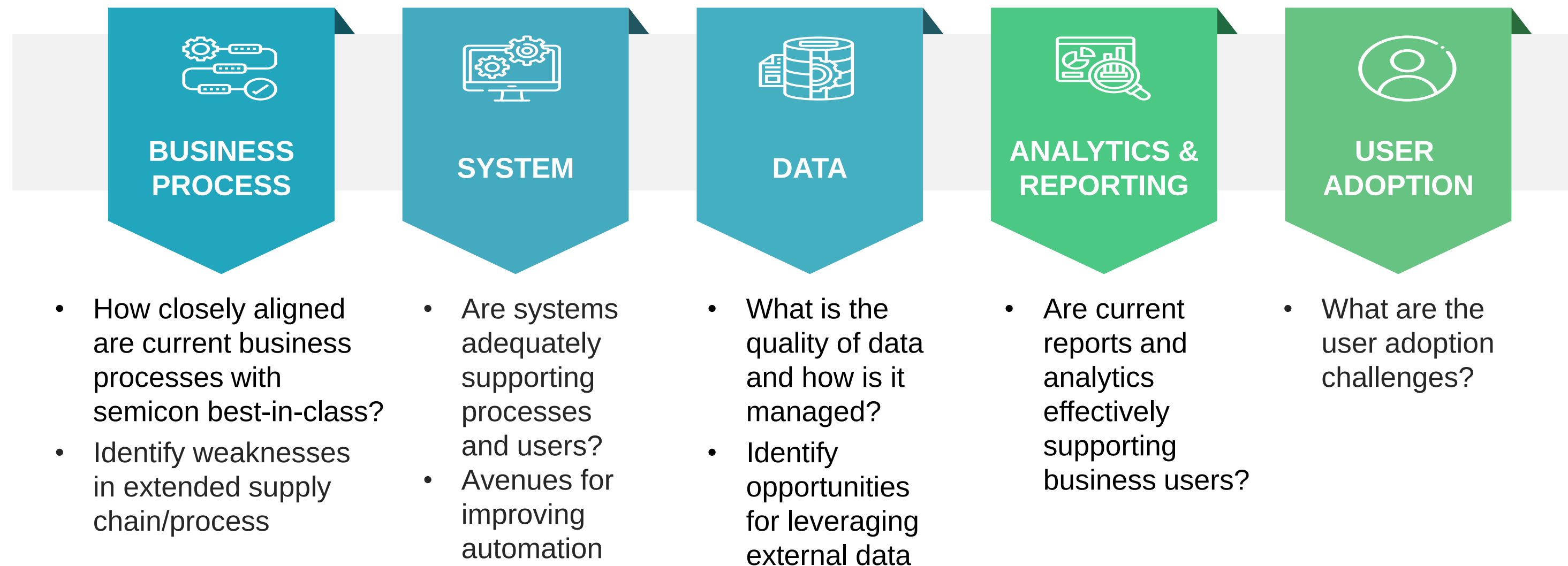
100+
Assets Facilitating
Training and Adoption

#1 – DIAGNOSTIC FRAMEWORK

Business Requirement

Dynamic business model and lack of comprehensive framework across process, system, data, analytics and users for root cause analysis to enable supply chain transformation decisions for semicon

Offering Features



Benefits / Deliverables

- Roadmap transformation recommendation based on holistic semicon perspective
- Business case preparation
- Process comparison with leading semicon industry best practices
- Unbiased perspective on planning challenges faced with guidance from semicon SMEs
- Ideal tool selection for supply chain planning

Illustrative Case Study

Large US-Based
Semicon Company

Business Objectives

- Impact in processes due to change in business model
- Improve wafer inventory and capacity utilization

Bristlecone Solution

- Provided industry best-in-class business processes and fit-gap analysis for a fabless company
- Developed a roadmap for supply chain planning solution after studying current business challenges, futuristic growth and collaboration with contract manufacturers
- Provided tool fitment against four top supply chain tools with detailed fit-gap analysis

Benefits Achieved

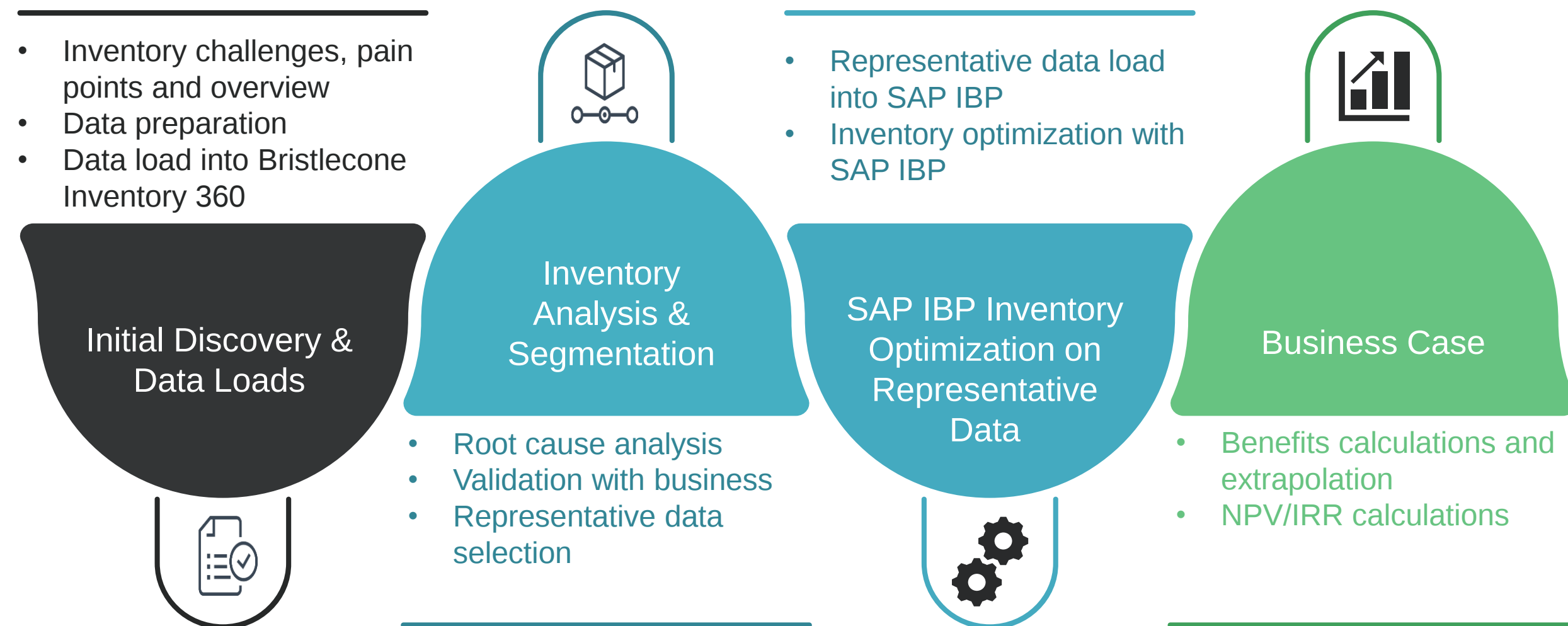
- Industry best practices for fabless company
- Clear identification of issues and challenges across processes, data, technology, people skills, etc.
- Recommendation for best tool for supply chain planning solution

#2 – INDUSTRY ANALYSIS FOR SEMICON

Business Requirement

Lack of accurate quantifiable insights into potential inventory savings of wafer inventory by use of multi-echelon inventory optimization tool to enable a comprehensive business case

Offering Features



Benefits / Deliverables

- One-time root cause analysis to identify root cause of excess inventory
- Quantitative validation of root cause identified using representative data
- Business case for investment into multi-echelon inventory optimization in SAP IBP
- Identification of prerequisites and supply chain transformation roadmap recommendations

Illustrative Case Study

Global Pharma and CPG Firm

Business Objectives

- No quantitative insight into potential for reducing inventory
- Lack of user trust in multi-echelon inventory optimization

Bristlecone Solution

- Selection of representative data including mix of products with different strategies
- SAP IBP inventory optimization enabled business case

Benefits Achieved

- \$8M inventory saving possibility identified
- Hands-on user involvement leading to increase in user trust

Key Highlights

5+

Inventory Analysis Exercise with CPG Customers

30+

Preconfigured KPIs in Inventory 360 IP for CPG Industry

100+

Preconfigured IBPNOW Scenarios for Rapid IBP Build

#3 – PROTOTYPING, POC AND HANDS-ON EXPERIENCE

Business Requirement

Lack of trial options before purchasing licenses of planning tool to try out the capabilities and fitment match with business requirement

Offering Features

Rapid Prototyping

Mock-ups and system-based solution capability showcase

POCs

Detailed level mapping of business process and requirement to showcase proposed solution impacts in an integrated system



Hands-On Experience

Customer gets hands-on access to Bristlecone IBP system; use of mock cycles and user stories to simulate day in a life of planners

Benefits / Deliverables

- Fully scalable model for prototypes to reduce design and build time during implementation
- Hands-on system validation by planners
- Lays solid foundation to build on the desired solution
- Articulate improvement potential and value using actual business data
- Minimize risk to project implementations

Illustrative Case Study

Global Dispensing System Manufacturer

Business Objectives

- Improve user confidence on IBP solution
- Detailed comparison of IBP and APO features

Bristlecone Solution

- POC with custom requirement was built in IBP
- Multiple demos to various business and IT users
- Advantages and disadvantages of IBP over APO

Benefits Achieved

- Clear understanding of tool capability
- Understanding of ability to resolve current challenges

Key Highlights

15+

IBP POCs
Conducted for
Semicon Industry

100+

Preconfigured
Assets to Accelerate
POC Builds

85%

Client Satisfaction
Score for POCs

#4 – AGILE SPRINT-BASED MODEL

Business Requirement

Lack of a true agile sprint-based implementation model for SAP IBP; lack of a pick and choose model for IBP solution implementation for semicon industry

Offering Features

	Preparation Phase	Sprint 1					Sprint 2					Sprint 3				
	3 Weeks: Sprint Planning	13 Weeks: Up to 5 below processes without integration					13 Weeks: Up to 5 additional processes with integration					13 Weeks: Up to 5 additional processes with integration				
Sales & Operations Planning	JAM Collaboration	Demand Review	Supply Review	Pre-S&OP Meeting	Executive S&OP Meeting											
Demand Planning	Demand Sensing	Clean Historical Data	Product Segmentation (ABC/XYZ)	Statistical Forecasting & Best Fit	Product Lifecycle Planning	Stake holder inputs	Consensus Demand Planning	Die Bank Forecast	Waferization of Demand Plan	Revenue & Margin Calculation						
Supply & Response Planning	Forecast and Customer-Specific Consumption	Unconstrained Wafer and Capacity Requirement	Priority-Based Planning	Capacity Planning for CMs	Safety Stock Planning	Planning for MTS, ATO and MTO	Multi-Sourcing and Stock Use-Up	Speed Binning, Down binning	Multilayered Simultaneous Capacity Constraints	What-if Planning and Gating Factor Analysis						
Inventory & Distribution Planning	Strategic Inventory Positioning	Distribution of Inventory from Die Bank	Multi-echelon Inventory Optimization	Allocation Planning and order confirmation	Advanced ATP and RBATP											
Control Tower	Vendor Collaboration	FG and Die-bank Inventory Visibility	Capacity visibility and vendor management	Wager inventory Visibility	Alerts & Exception Handling											

Benefits / Deliverables

- Minimum viable product approach to start with core features before moving to advanced scenarios
- User-focused delivery approach to maximize adoption of IBP solution across sales, marketing, demand planning, supply planning and distribution planning
- Flexible model with more power to users for selection of relevant scenarios
- Easy scope increase/decrease based on business comfort and need

Illustrative Case Study

Middle East
Electronic Retail

Business Objectives

- Fast time to value with early deployment of MVP
- Need to ensure early planner involvement and hands-on use

Bristlecone Solution

- Agile-based sprints to deliver demand and supply planning solutions using IBP Demand, S&OP and Supply modules
- Align project plan with key events, e.g., Dubai Shopping Festival

Benefits Achieved

- 1st integrated go-live of basic demand in 16 weeks
- Rapid ramp-up in plan with adherence to KPIs

Key Highlights

4

Agile Sprint-Based
Implementations

20+

Advanced Scenarios
Preconfigured and
Implemented

100+

Preconfigured
IBPNOW Scenarios
for Rapid IBP Build

#5 – SEMICON IMPLEMENTATIONS LEVERAGING IBPNOW

Business Requirement

Lack of comprehensive planning solution in line with leading CPG industry best practices covering all aspects of supply chain – Demand, Supply, Inventory, S&OP, DDMRP and Supply Chain Control Tower

Offering Features

Sales & Operations Planning	JAM Collaboration	Demand Review	Supply Review	Pre-S&OP meeting	Executive S&OP meeting						
Demand Planning	Demand Sensing	Clean Historical Data	Product Segmentation (ABC/XYZ)	Statistical Forecasting & Best Fit	Product Life cycle Planning	Stake holder inputs	Consensus Demand Planning	Die Bank Forecast	Waferization of Demand Plan	Revenue & Margin Calculation	
Supply & Response Planning	Forecast and cust specific consumption	Unconstrained Wafer and Capacity requirement	Priority Based Planning	Capacity Planning for CMs	Safety Stock Planning	Planning for MTS, ATO and MTO	Multi Sourcing and stock use up	Speed Binning, Down binning	Multi layered simultaneous Capacity constraints	What if Planning and Gating factor analysis	
Inventory & Distribution Planning	Strategic Inventory Positioning	Distribution of inventory from Die Bank	Multi-echelon Inventory Optimization	Allocation Planning and order confirmation	Advanced ATP and RBATP						
Control Tower	Vendor Collaboration	FG and Die-bank Inventory Visibility	Capacity visibility and vendor management	Wager inventory Visibility	Alerts & Exception Handling						

Benefits / Deliverables

- Comprehensive blueprint with semicon industry-specific scenarios and best practices
- Rapid initial onboarding and training using IBPNOW artifacts
- Faster solution build using reference planning views, integration mapping sheets, etc.
- Enabling higher user adoption due to early access of users into system and scenarios
- Risk reduction using IBPNOW as a benchmark for semicon industry best practices

Illustrative Case Study

Globally Leading Brewery

Business Objectives

- Improve demand visibility in complex supply chain
- Quick response to drastic demand changes

Bristlecone Solution

- Strategic segmentation-based forecasting to enable automation
- Intelligent demand planning using demand patterns in short term

Benefits Achieved

- 10% improvement in forecast accuracy
- Faster response to demand change enabling higher OTIF

Key Highlights

40+

Go-Lives in Semicon Industry Ecosystem

50+

Supporting Artifacts: Integration Mapping, Reference Docs

100+

Preconfigured IBPNOW Scenarios for Rapid IBP Build

#6 – AATPNOW

Business Requirement

Lack of a preconfigured solution for semicon industry for order fulfillment planning to enhance OTIF and stick to commitments provided

Offering Features

Pre-configured Scenarios	Basic ATP Check	Product Allocation	Back Order Processing	Release for Delivery	Supply Assignment Run	IBP response with S4 HANA
Documents	Blueprint Document	System Configuration				
Training Manuals	S4 HANA AATP Introduction	S4 HANA AATP Fiori Apps	S4 HANA Features	S4 HANA AATP Comparison		
Data Templates	Material Master	Customer Master	Requirement Class	Availability Check Group	Procedure by Requirement Class	Availability Check for Schedule Line
Interfaces	S4 to IBP	IBP to S4				

AATPNOW

Benefits / Deliverables

- Comprehensive blueprint with semicon industry-specific scenarios and best practices
- Rapid initial onboarding and training using AATPNOW artifacts
- Integrated into S/4HANA core, with improved performance with the in-memory platform
- Simple, intuitive mechanism for maintenance of allocations; prioritized customers with the new ‘win/gain/redistribute/fill/lose’ strategies

Illustrative Case Study

Globally Leading Chemical Manufacturing Company

Business Objectives

- Improve order commitments process for supply disruption and abnormal demand scenario
- Inclusion of differential management for distribution

Bristlecone Solution

- Product allocation solution capable of maintaining customer entitlement in advance based on forecast
- Entitlement planning at different level to improve confirmation

Benefits Achieved

- Improved order confirmation efficiency for high-priority customer
- Increased customer satisfaction score for our client

Key Highlights

45+

AATPNOW
Go-Lives

30+

Preconfigured
Semicon Industry
Scenarios

30+

APO, ATP and S/4
ATP Solution SMEs

#7 – SUPPLY CHAIN CONTROL TOWER

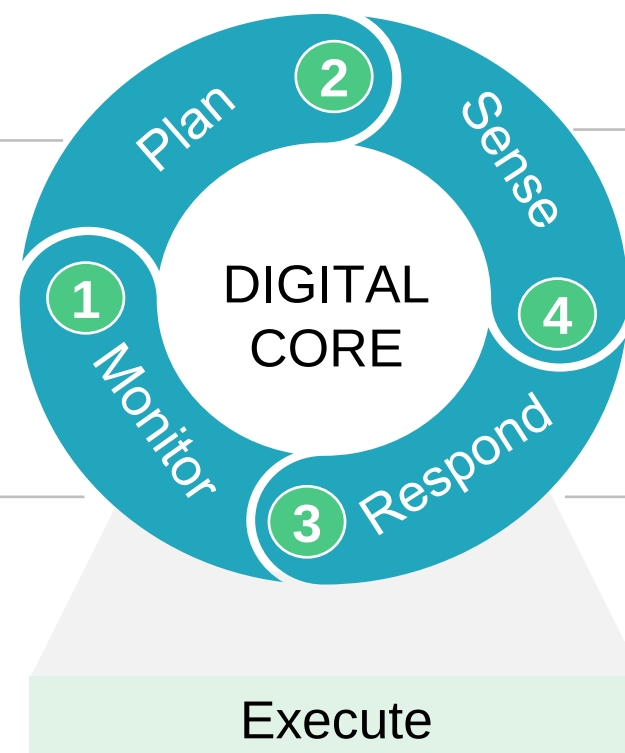
Business Requirement

Lack of clarity in creating a comprehensive solution for control tower transformation to augment existing supply chain planning landscape and enhance visibility and responsiveness

Offering Features

- Demand & Supply Plan
- Network Design
- Inventory Optimization
- Financials

- Enterprise Visibility
- Performance Monitoring
- Identifying Exceptions



- Events
- Demand Signals
- Supply Signals
- Supply Chain Risk Assessment

- Expedite
- Ramp Down
- Re-plan
- Find Alternate

- Order Fulfillment & Customer Services
- Logistics, Warehousing & Distribution
- Manufacturing / Production
- Procurement

Roadmap View

Level1 – Visibility CT

1

Level2 – Responsive CT

1

2

3

Level3 – Intelligent CT

1

2

3

4

Operating View

Strategic

Tactical

Operational

Functional View

Planning

Procurement

Manufacturing

Customer Services

Benefits / Deliverables

- An iterative, small sprint-based transition to control tower transformation
- Supply chain KPIs / metric-driven dashboards to improve response time
- Proactive decision-making by predicting disruption using advanced analytics
- Interactive dashboards allowing drilldowns improving root cause identification
- Global companies to use alerts to identify issues with local KPIs

Illustrative Case Study

Globally Leading Genetic Devices Manufacturer

Business Objectives

- Poor supply chain visibility to senior management
- Poor exception management capabilities

Bristlecone Solution

- Improved KPI-driven control tower capabilities for planning, logistics and manufacturing based on agile methodology
- Role-based KPI dashboards

Benefits Achieved

- Enhanced exception management and supply chain visibility
- Increased efficiency to tackle recurring supply chain challenges

Key Highlights

5+

High-Tech Control Tower Engagements

50+

Preconfigured System Accelerators

10+

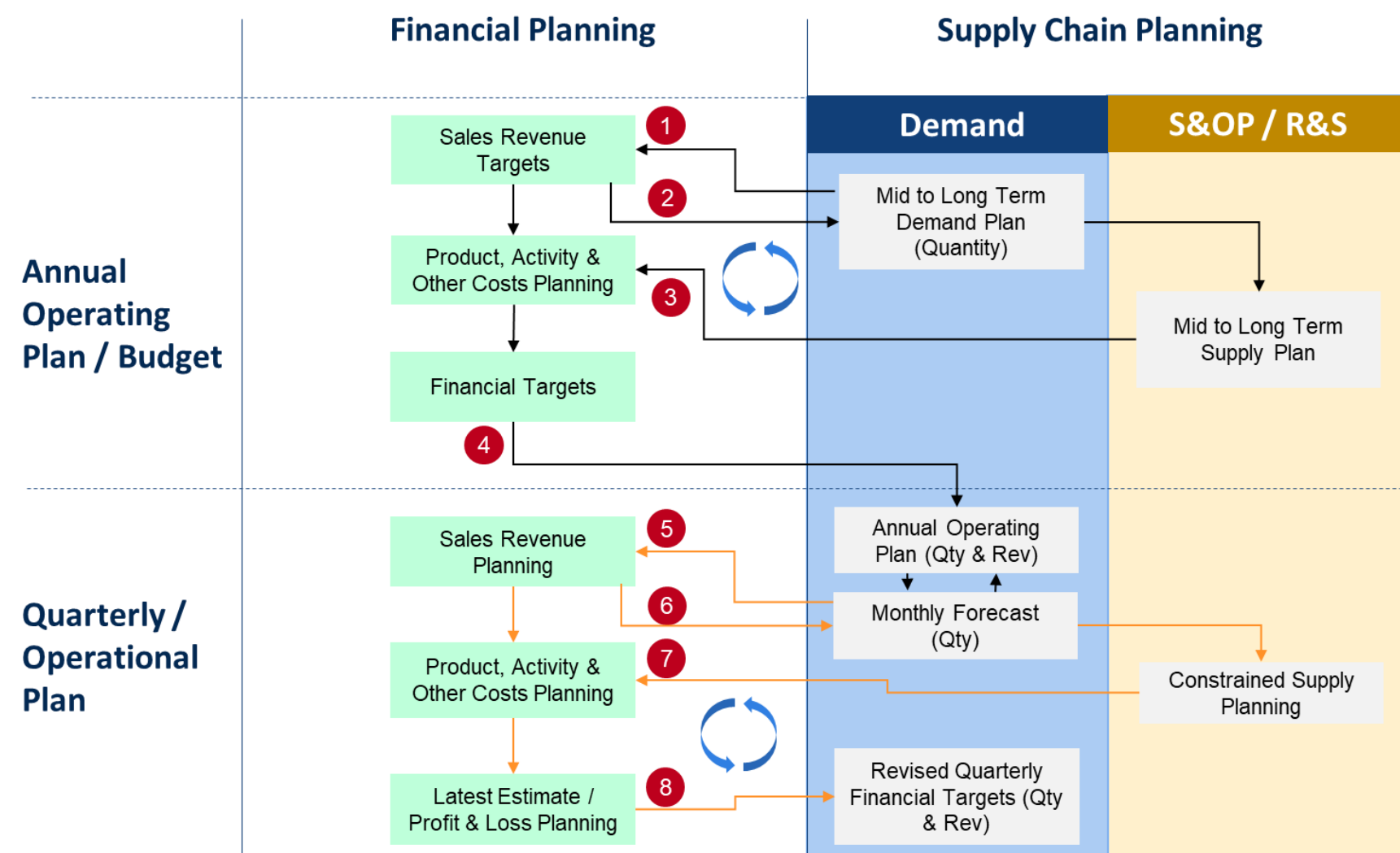
Artifacts for Detailing of Control Tower Use Cases

#8 – COLLABORATIVE ENTERPRISE PLANNING

Business Requirement

Lack of comprehensive simulation capability by integrating supply chain planning tool with financial planning tool; no capability to enable P&L simulation up to gross margin level

Offering Features



Benefits / Deliverables

- Integrated financial planning will enable more accurate financial projections
- Reduced turnaround time for creating financial estimations
- Optimal financial decision-making with use of real supply chain data
- Capability to compare budget, actuals and forecast at a gross margin level
- Financial modeling of intercompany flows and impact of currency conversion

Illustrative Case Study

Global Dispensing System Manufacturer

Business Objectives

- Manual intercompany relationships with PO/SO relationships
- No link between financial planning and supply chain planning

Bristlecone Solution

- Supply chain financial planning solution using combination of SAP IBP S&OP and BI-embedded BPC
- Collaboration between supply chain and finance teams for annual, quarterly and monthly planning cycles

Benefits Achieved

- Improvement in budget plan adherence
- Faster planning cycle time through connected systems

Key Highlights

10+

Supply Chain Financial Planning Scenarios

3

Global Implementations with Financial Planning

15+

Preconfigured Interface Mapping Templates

#9 – CONTINUOUS INNOVATION MODEL

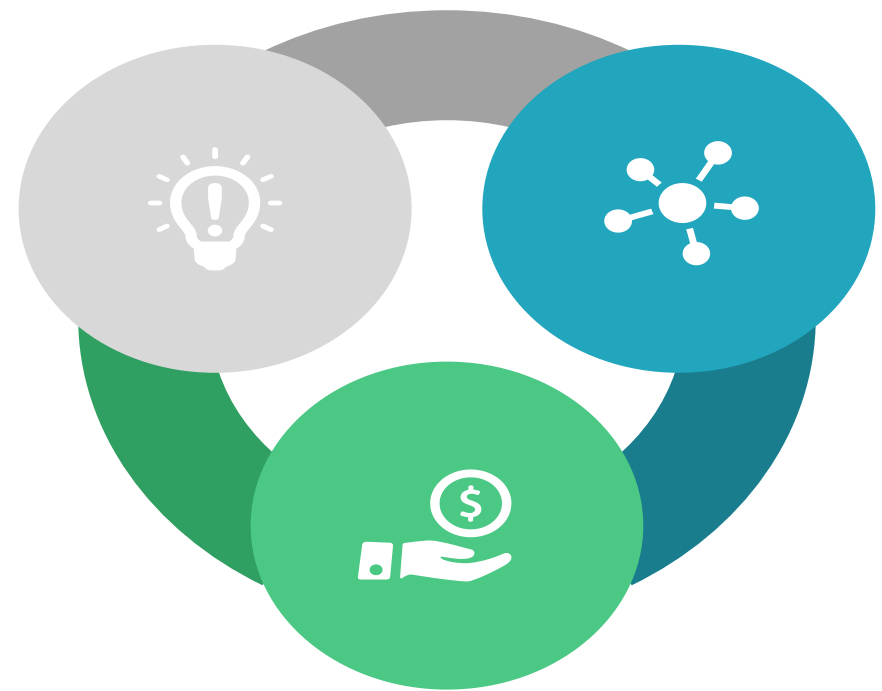
Business Requirement

Lack of continuous upgradation of process, features after planning solution implementation leading to inefficient planning process in comparison to best-in-industry practices

Offering Features

Solution Enhancements

- Evaluate and implement new and improved functionality available with IBP quarterly upgrade



Effectiveness Measurement

- Conduct system health check for performance
- Conduct value-add analysis to determine process effectiveness and identify gaps
- Measure plan adherence for production, transportation and deployment and identify gaps
- Evaluate planner productivity and identify NVA activities to be eliminated

Solution Refinement

- Evaluate and fine-tune supply and inventory optimizations parameters
- Fine-tune statistics model based on forecast accuracy/models and historical data pattern

Benefits / Deliverables

- Leverage quarterly upgrades in semicon industry cloud, e.g., new demand planning algorithms for intelligent demand planning, etc.
- Identify and incorporate best practices and areas for improvement from across the globe
- Identify training and change management requirement and create roadmap
- Quantifiable assessment of system effectiveness and usage of planning system

Illustrative Case Study

Globally Leading
Battery Manufacturer

Business Objectives

- Reduction in planner efficiency and accuracy
- Lack of understanding of gaps in demand and supply planning

Bristlecone Solution

- Improved statistical forecasting using latest cloud features
- Systematic scenario planning with segmented runs for improved performance

Benefits Achieved

- 20% faster supply optimizer planning runtime post-upgrade
- 5% increase in statistical forecast accuracy

Key Highlights

10+

Customers
Onboarded on
Continuous
Innovation Model

30+

Preconfigured
Assets and KPIs for
Measuring System
Effectiveness

5+

Options for
Reporting Tools
Used – BI, Tableau,
Qlik, SAC, Etc.



**Let's Keep The
Conversation Going**

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