



# 2015 UTC Supplier Conference

April 29, 2015

UTC SUPPLY CHAIN   
**OPPORTUNITY**  
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**United Technologies**

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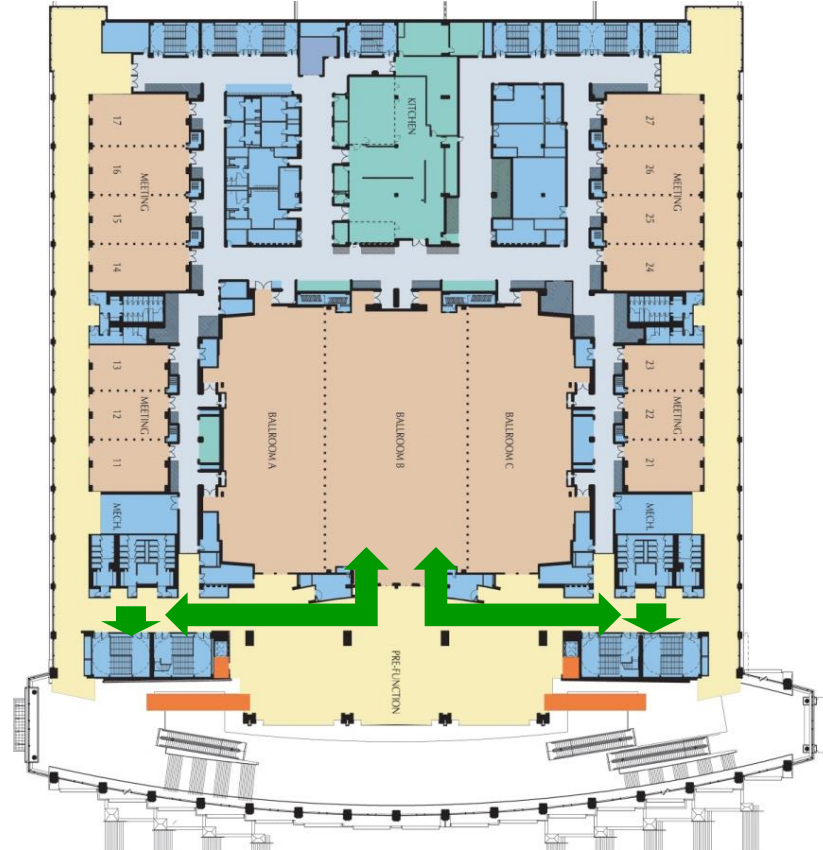
Cranbury, NJ

# QUESTION?

If you have a question during today's presentation, please submit it to:

[OpportUNITYfeedback@utc.com](mailto:OpportUNITYfeedback@utc.com)

# EMERGENCY EXITS





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# WELCOME

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Benoît Brossoit, UTC Vice President, Operations

In the past two years have you personally attended a UTC or UTC business unit supplier forum?

1: Yes

2: No





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# UTC VISION FOR FUTURE

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Greg Hayes, UTC President & Chief Executive Officer





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# **UTC SUPPLIER / PARTNER RELATIONSHIP**

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Benoît Brossoit, UTC Vice President, Operations

Is at least one of your sites part of the supplier gold program?

1: Yes

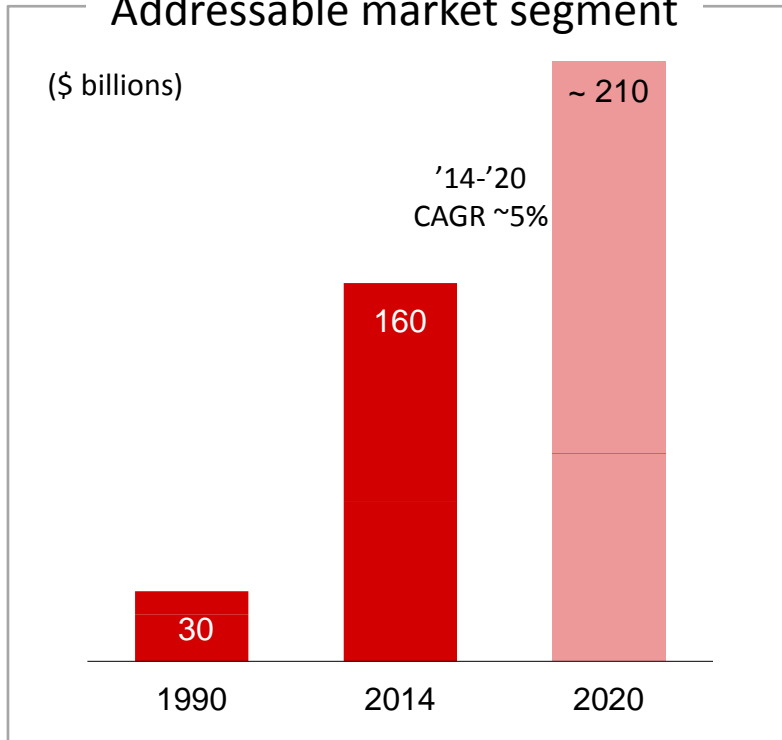
2: No

3: I don't know

# POSITIONED FOR GROWTH

## Building & Industrial Systems

### Addressable market segment



### Growth drivers



Urbanization



Replacement / modernization



Life safety



Security



Efficiency & environment



Regulatory changes

# POSITIONED FOR GROWTH

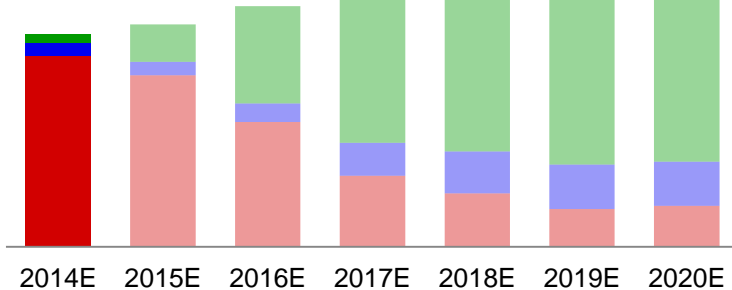
## Pratt & Whitney

### Large Engines

(Projected number of engines)



- Next generation product family
- F135
- Legacy

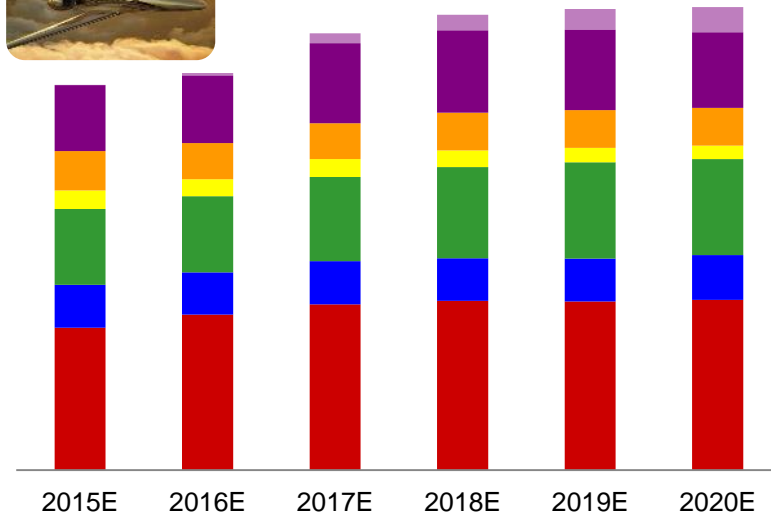


### Small Civil Engines

(Delivery outlook)

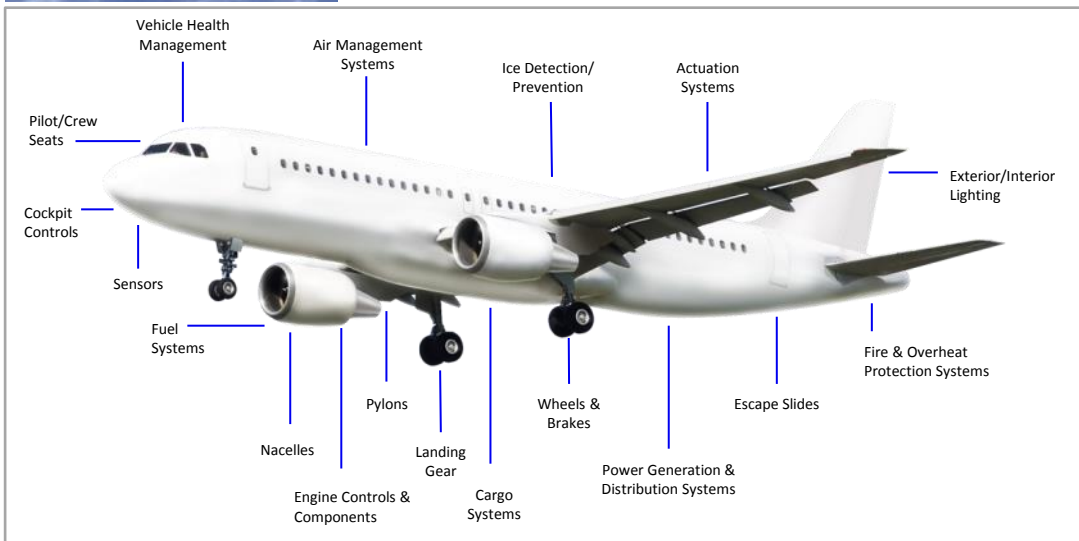


- General Aviation
- Regional (incl APU)
- Helicopter
- Military
- Aftermarket
- Corporate Fans (no PW800)
- PW800



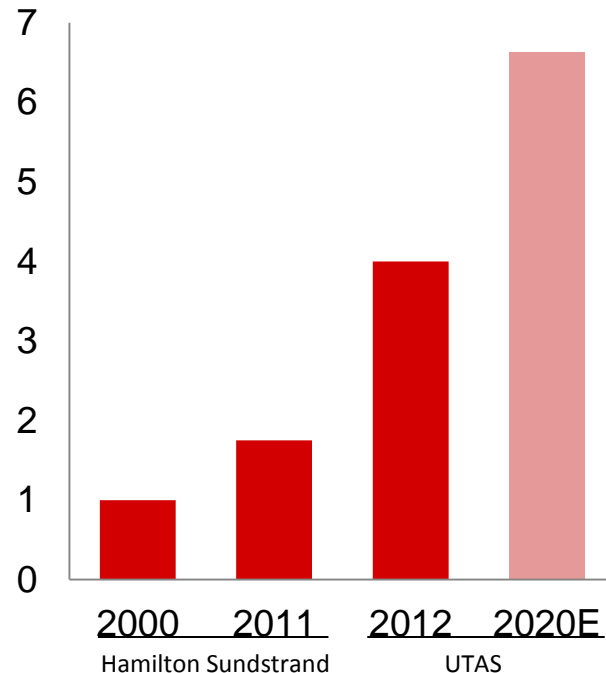
# POSITIONED FOR GROWTH

## UTC Aerospace Systems



### Shipset values

(Major programs, indexed to 2000 shipset value)



# POSITIONED FOR GROWTH

## Sikorsky

2014 New Program Wins

### Production



BLACK HAWK



Naval hawk™



S/H-92™



S-76D™



CMHP



M28®



Lights



S70i™/ T-70



CH-53K



S-97 RAIDER™



SB>1 Defiant™

### Development



CRH

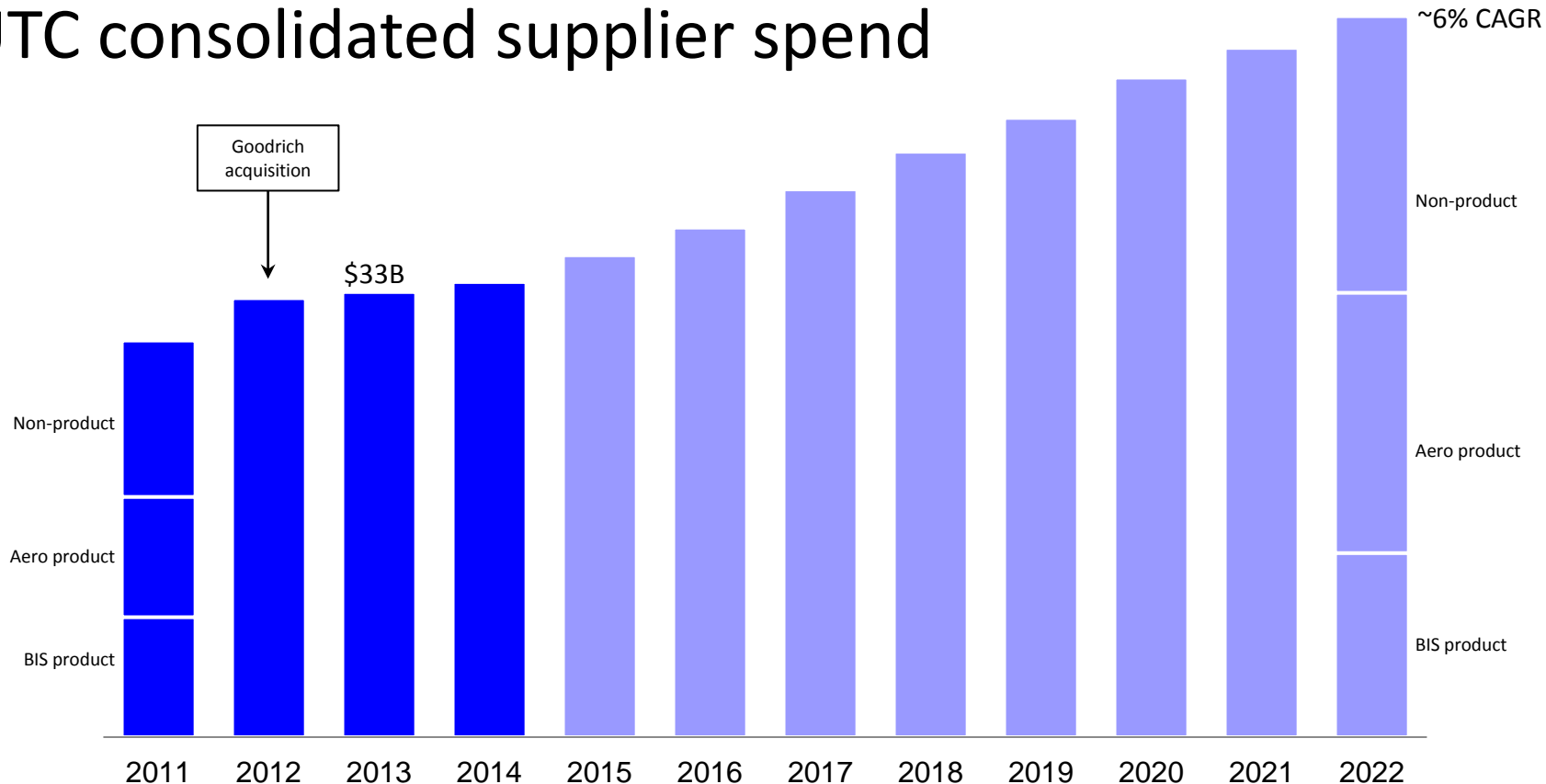


VH-92



# POSITIONED FOR GROWTH

## UTC consolidated supplier spend



# UTC ACE OPERATING SYSTEM

CUSTOMERS

SUPPLIERS

EMPLOYEES

WHAT WE DELIVER

**QUALITY**

products & services



HOW WE WORK

**LEAN PROCESSES**

information & product flow

**TOOLS**

**COMPETENCY**

**CULTURE**

# INVESTING IN OURSELVES

## Facilities & Manufacturing Technology



## People & Processes



## IT Systems



# UTC EXPECTATIONS

Quality



Velocity

UT **V<sup>2</sup>** *Value*  
**x** *Velocity*

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United Technologies Corporation

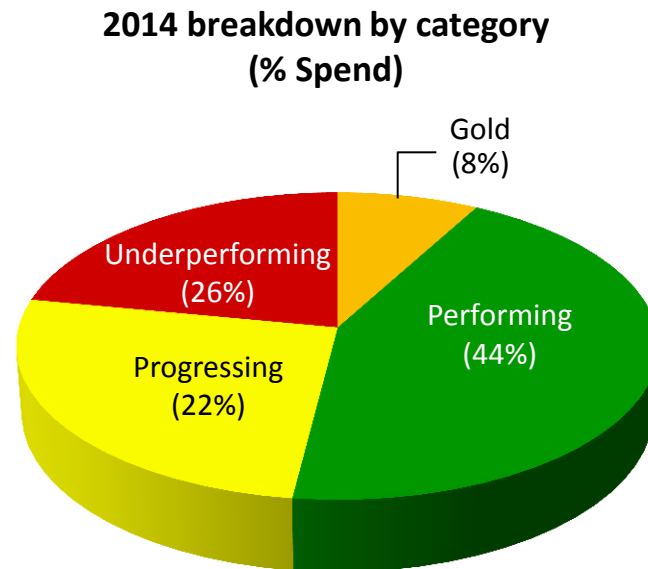
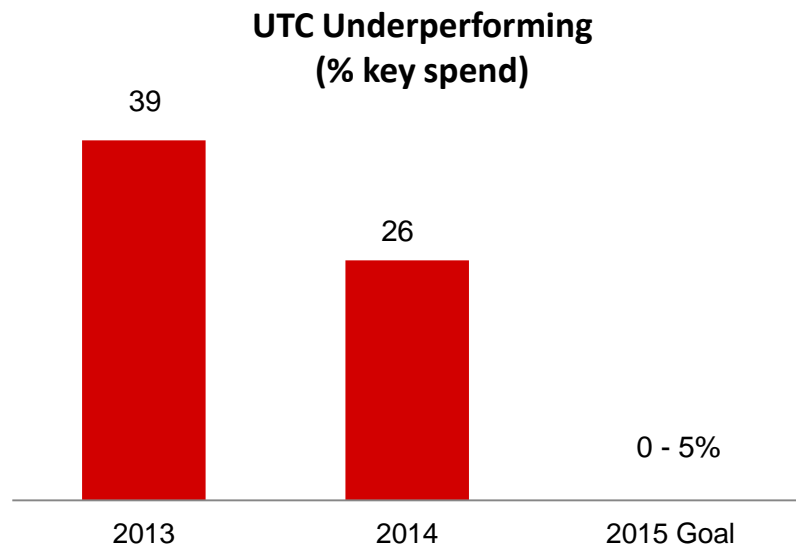
Cost

UT **SMART** *Choice*

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United Technologies Corporation

## Supplier performance (Aero product only)



Driving tremendous inventory & cost to meet customer requirements

# SUPPLIER PERFORMANCE ISSUES

## Key causes

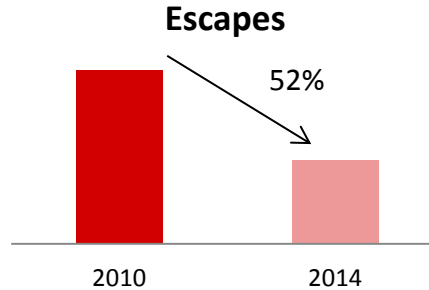
### OTD

Material planning /  
Lean flow

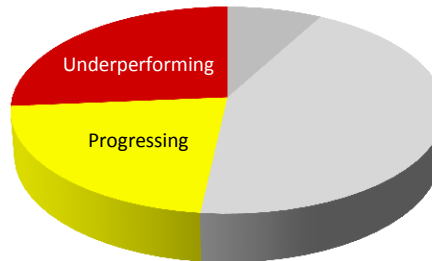
Inconsistent processes  
and quality

Capacity

Sub-tier management



2014 Performance (Aero prod. only)



### Major Quality Escapes

Major ethical compliance

Sub-tier management

Process control

Flowdowns (tier 1 & 2)

We have the tools in place to work together to fix these issues

# SUMMARY





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# **INDUSTRY CHALLENGES & OPPORTUNITIES**

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Tom Captain, Deloitte Vice Chairman, Global and U.S.  
Aerospace & Defense Leader



## Aerospace and Defense Industry Challenges and Opportunities: What's Different?

Tom Captain,  
Vice Chairman, US Aerospace & Defense  
Leader, Deloitte LLP;  
Global Aerospace & Defense Leader,  
Deloitte Touche Tohmatsu Limited.

United Technologies Supplier Conference,  
April 29, 2015



# Background

- Industry undergoing stress and disruption
  - Technology
  - Business model
  - Supplier relationship
- The customer is requiring ever lower acquisition and operating costs, and innovative functionality
- Resulting in industry transformation, consolidation and acquisitions

**Is this the automotive, personal computer or consumer electronics industry?**

**Yes, and now it is in full swing in the aerospace and defense industry**

# Commercial Aerospace

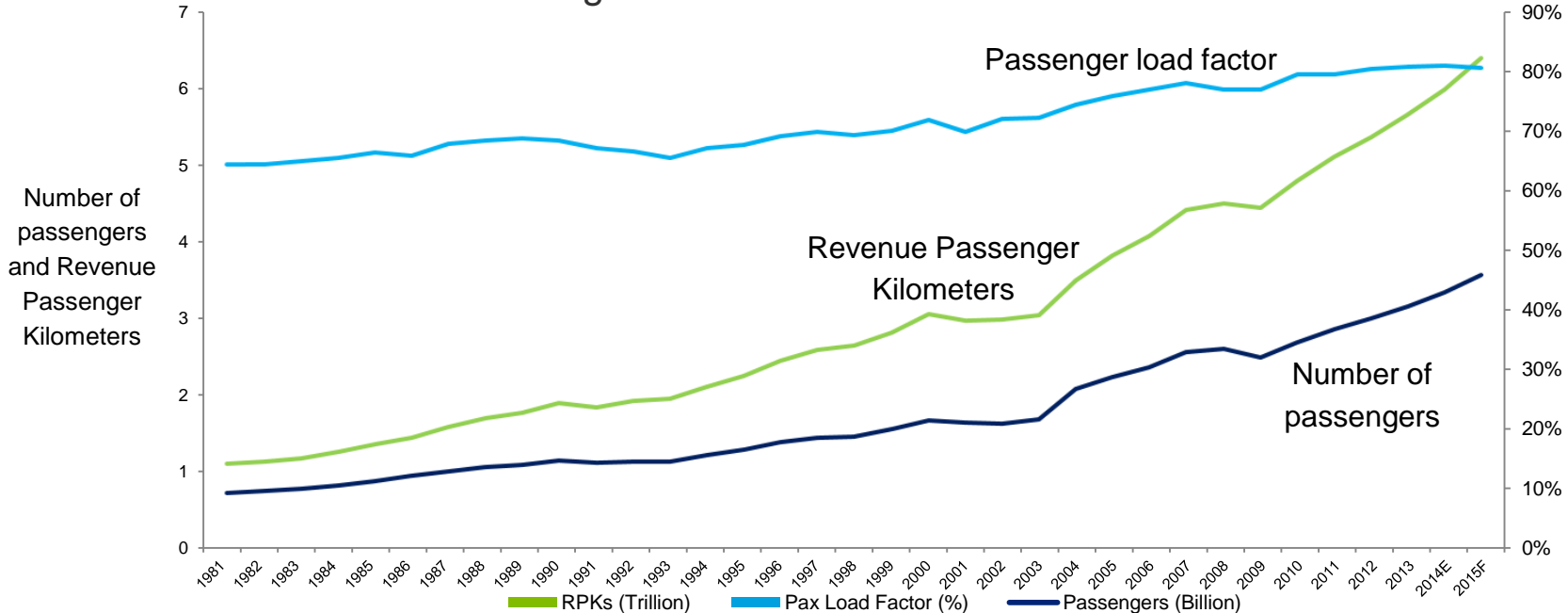
# The good news – how long will it last?

- 5 consecutive years of record orders, revenues, production and backlog
  - Global demand for travel due to global middle class growth and wealth creation
  - Airline capacity discipline resulting in profitable airlines
  - Technology advances in propulsion, materials science and avionics, driving obsolescence
- What is wrong with this picture? Plenty
- Let's start first with historical trends and interesting data



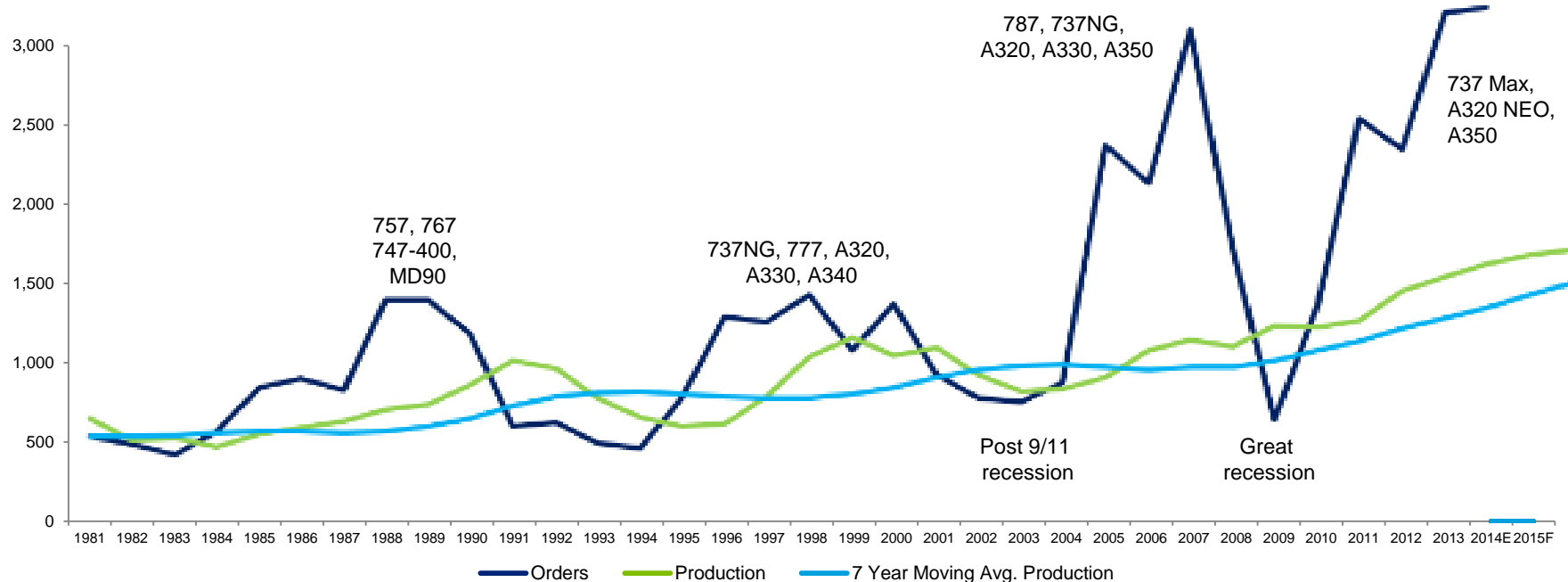
# Long term increases in travel demand are due to global demographics and wealth creation

- 900 million to 3+ billion PAX annually from 1981 to 2015
- 1 trillion to 6+ trillion annual RPKs over same period
- Load factors at an all time high



# Resulting in increased orders and production volume

- To respond to rising PAX demand
- To replace obsolete aircraft
- Deliveries increasingly destined for China, Middle East and India



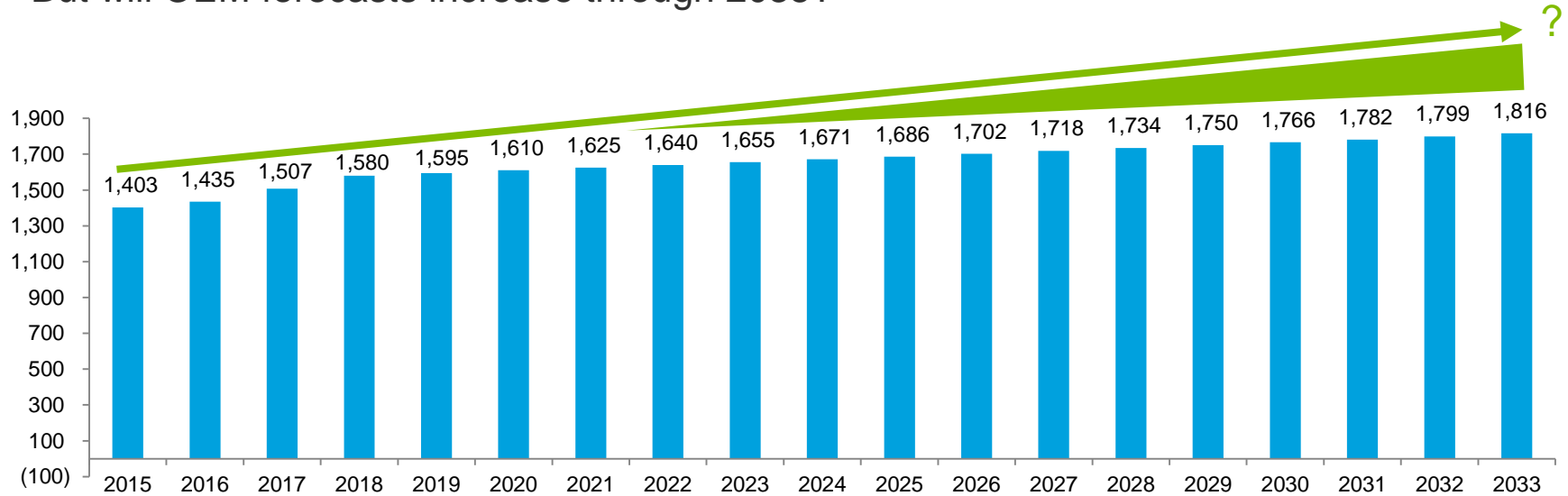
# Backlog and deliveries are doubling in 8, 10, 12 years

Year	Backlog	Deliveries	Years of Backlog
1998	3,092	792	3.9
1999	2,957	914	3.2
2000	3,238	802	4.0
2001	2,932	852	3.4
2002	2,598	684	3.8
2003	2,514	586	4.3
2004	2,551	605	4.2
2005	3,948	668	5.9
2006	4,930	832	5.9
2007	6,759	894	7.6
2008	7,308	858	8.5
2009	6,863	979	7.0
2010	6,995	972	7.2
2011	8,208	1,011	8.1
2012	9,055	1,189	7.6
2013	10,639	1,274	8.4
2014	12,175	1,352	9.0

\* Box indicates years to double

# Aircraft production forecast shows declining rate of growth starting in 2019, but.....

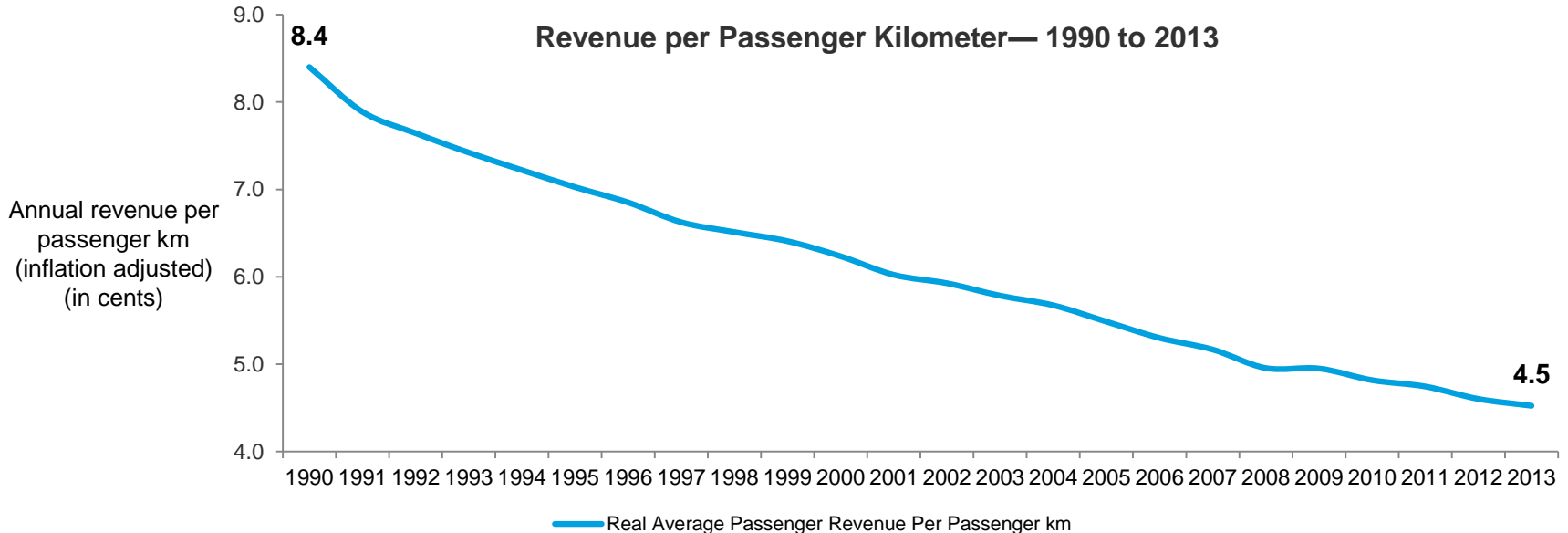
- Calculated rate of growth is decreasing, based on current market forecasts by OEMs, but...
- Market forecasts keep increasing each year, which now total ~33,000 aircraft delivered over the next 20 years
- But will OEM forecasts increase through 2035?





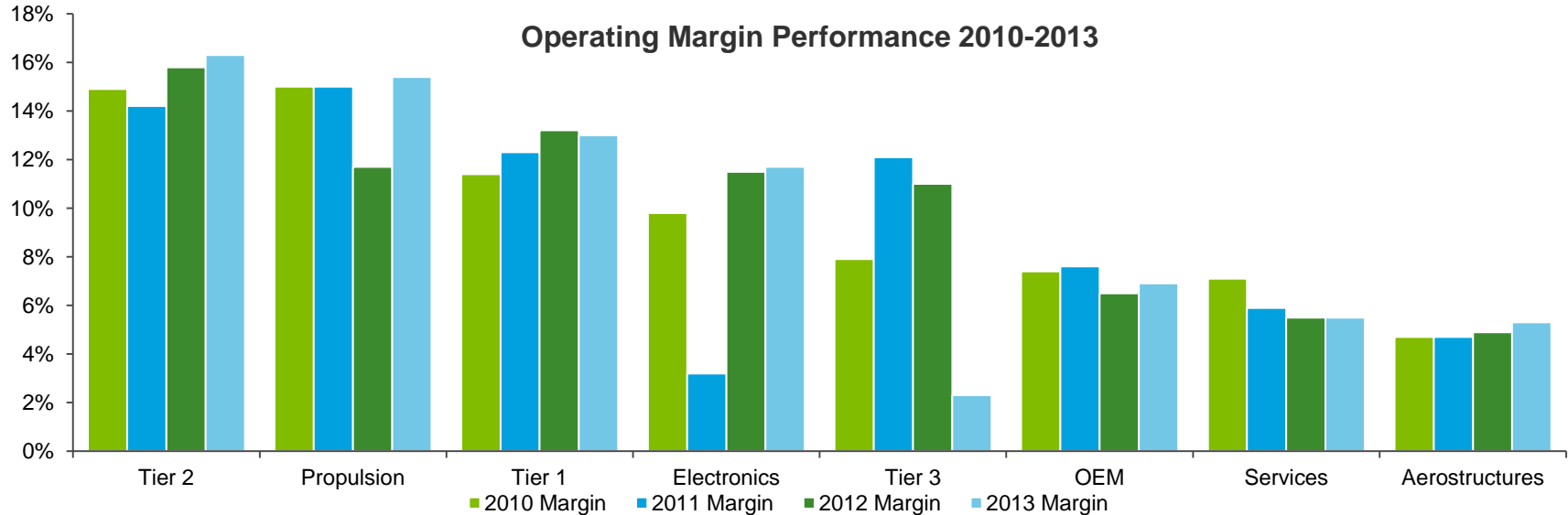
# Supplier economics starts with falling airfares that impact the value chain.....

- 46% decrease (CPI-adjusted) in airfares since 1990—creating demand for travel
- 150+ bankruptcy filings 1998-2003 caused by overcapacity, unaffordable cost structure and pension obligations



# Which is disrupting the business model of where profit is distributed

- Even though airlines are finally making profits, falling airfares are having a disruptive influence on the value chain
- Different supply chain tiers have varying operating margins



# What's the impact of this on commercial suppliers?

- Airline PAX pricing pressure, requires less costly airline operations and aircraft CAPEX
- Aircraft OEM response has been to challenge the supply base:
  - Risk sharing partnerships
  - Pay to play schemes
  - Technology innovations; less power, miniaturization, longer maintenance cycles, less weight, more fuel efficiency, expanded functionality
  - YOY cost reductions, price concessions, partnering or equivalent
- Supplier capacity and capability challenges:
  - Design engineering
  - Program management
  - Supply chain management
  - Industrial capacity; machines, tooling, skilled people

# Defense

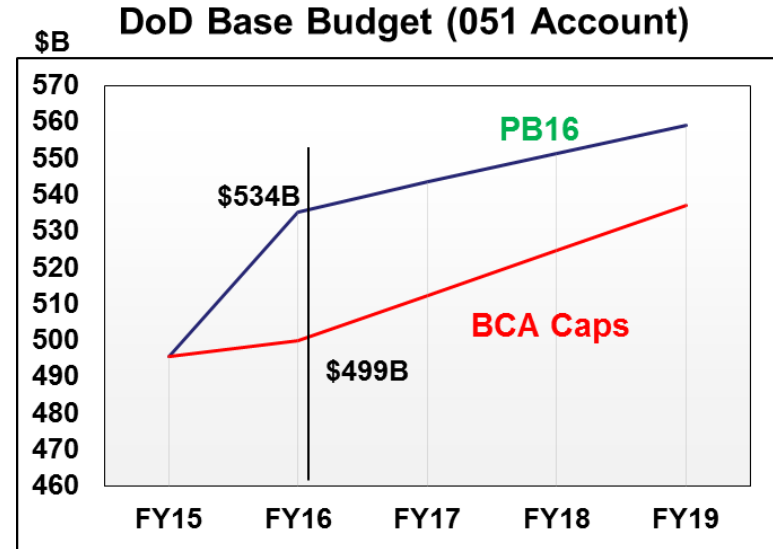
# DOD customer has reduced spending, but are we at the cyclical bottom?

- Declining budgets due to cessation of armed conflict in the Middle East and the Budget Control Act (BCA) of 2011 (sequestration)
  - \$500B over 10 years, with modified relief (~50%) due to the BBA of 2013
- 2016 Presidents DOD budget is \$534B plus \$51B for OCO; \$585B
  - Ignores sequestration with \$35B above the BCA cap of \$499B. Congress?








# Not clear about BCA relief, where no Congressional action may result in another round of cuts

- SECDEF and service chiefs all predict draconian actions would be required under sequestration
- Pundits expect a compromise somewhere in the middle
- PB16 increases readiness and investment accounts:
  - \$6.3B (10%) in RTD&E
  - \$14.1B (15%) in Procurement
  - \$14.4B (7%) in O&M



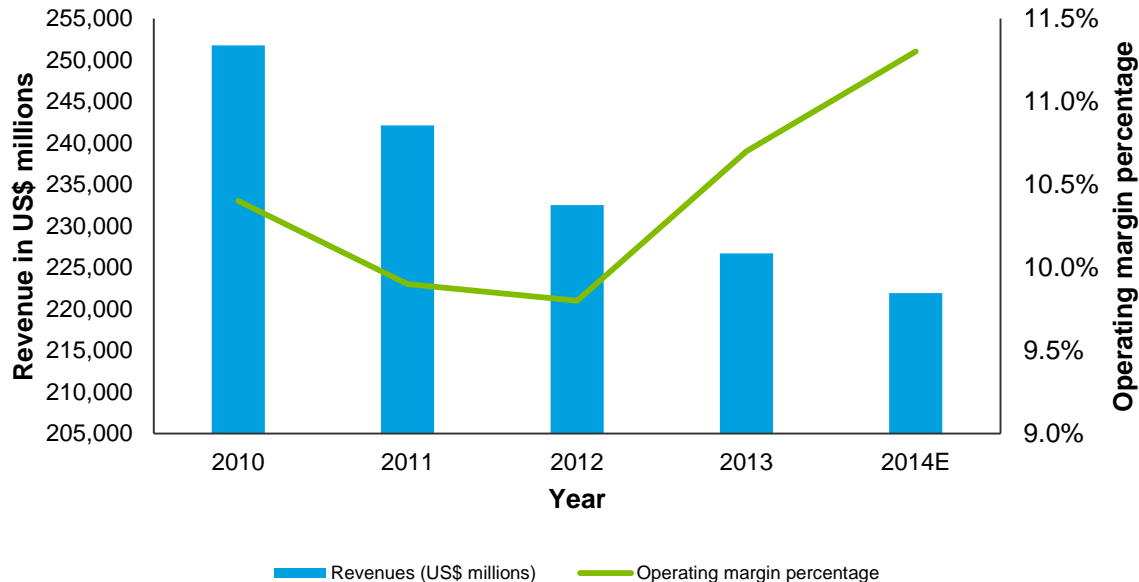
# Reduced budgets impacting defense contractors

- Global defense subsector forecast to decrease by 1.3% in 2015
- U.S defense contractors have been shrinking for 4 years
  - Have lost 167,000 employees since 2010
  - Only 4 of top 20 firms have grown revenues
  - Overall revenue declines of 9.7% since 2010 (~\$29B); 2.5% in 2013
- Percentage employment losses at mid and small firms were larger

	<b>2010</b>	<b>2013</b>	<b>Change</b>	
<b>Total defense company employment</b>	<b>1,030,387</b>	<b>863,623</b>	<b>-16.2%</b>	
Employees at top 20 (large) defense companies	768,002	651,132	-15.2%	
Employees at mid-sized defense companies	155,137	126,952	-18.2%	
Subtotal of employees at top 20 (large) and mid-sized defense companies	923,139	778,084	-15.7%	
Employees at small defense companies	107,248	85,539	-20.2%	

# But financial performance is improving

- US defense industry has improved operating margins, employee productivity and ROIC, despite revenue declines
  - Anticipatory cost cuts, plant closures,
  - Spin-offs of low margin and declining SBUs





# Revenue growth is the business imperative now

- Foreign military and direct commercial sales
- Must win DOD competitions
- Acquisitions to bolt-on capabilities or consolidate competitors
- Create new markets and demand; e.g., SpaceX, Scorpion, Predator
- New product development
  - ISR
  - Digital warfare
  - Cyber
  - Adjacent markets
  - Precision strike (rail gun, directed energy, laser)



# Create value thru innovation

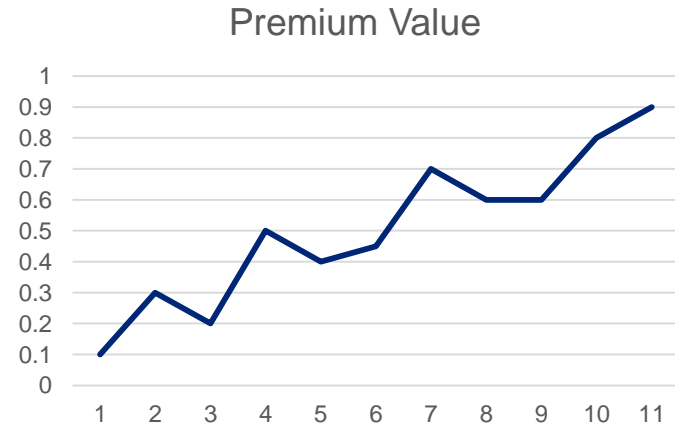
- Integrate engineered improvements and innovations into existing products
- Contribute to reducing direct operating cost, maintenance, weight, power, and size
- Increase affordability
- Apply process automation to become more efficient and less labor intensive
- Take calculated risks on new programs, with measured investments
- Can't continue to cut costs indefinitely; revenue growth is an imperative
- Don't wait for the RFP – create new demand



# Supplier Guidance

# What trends are affecting suppliers?

- Suppliers are merging to gain scale economies or selling out
- Labor being replaced with process automation and robotics
- In-sourcing, work recall
- 3-D manufacturing—will be a game changer
- Inevitable march towards commoditization, or, moving “up and to the right” to take pricing premiums
  - Systems of systems provider
  - Unique IP



# New supply chain value model is here to stay

- Financial, talent & operational requirements and implications of becoming a 'super supplier'
- Constrained ability to meet production volume demands, leading to risks of schedule delays
- Consolidation and fewer, larger suppliers controlling pricing
- Mitigation: OEMs are taking steps to reduce risk among supplier base
  - Bringing some design authority back in house
  - Recalling some manufacturing work packages
  - Execution of supplier development & surveillance programs
  - Providing financial support to help certain suppliers
- For suppliers, the new reality is that continual cost reductions and pricing pressure are here to stay

# Summary guidance for suppliers

- Factors of competition still valid
  - Scale economies
  - Risk taking, technology innovation
  - Agility, skills/talent, customer presence/intimacy
  - Growth imperative
- “Better” before “cheaper”—less parts, use less power, smaller, longer maintenance cycles, less weight, fuel efficiency, and expanded functionality
- Costs - overhead, labor, supply chain
- Aerospace and defense story is compelling
- Equity markets are bullish



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**BREAK**

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# **CUSTOMER INTRODUCTION**

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Bennett Crosswell, P&W President, Military Engines



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# UTC SUPPLIER EXPECTATIONS

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Sam Abdelmalek, UTC Vice President, Global Supply  
Management & Integration

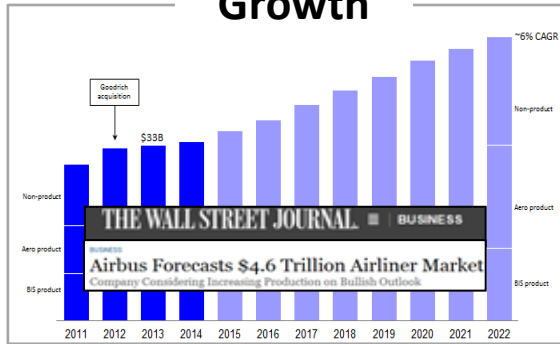
Are you aware of the UTC supply chain transformation?

1: Yes

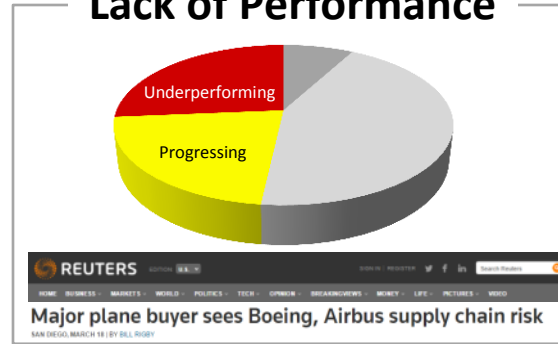
2: No

# WHY THE TRANSFORMATION?

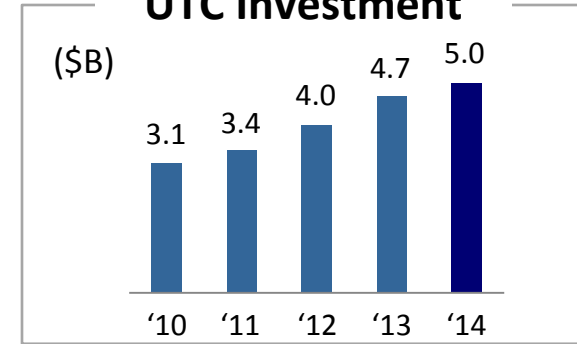
## Growth



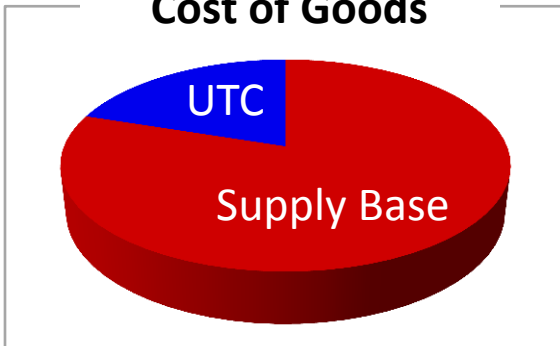
## Lack of Performance



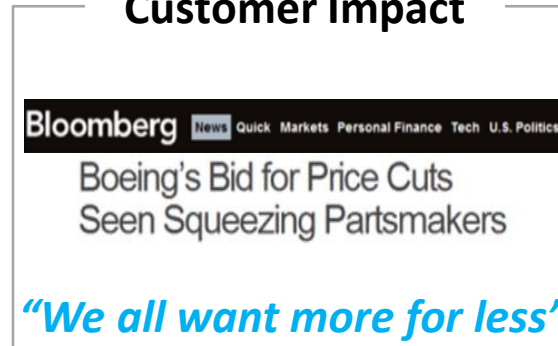
## UTC Investment



## Cost of Goods



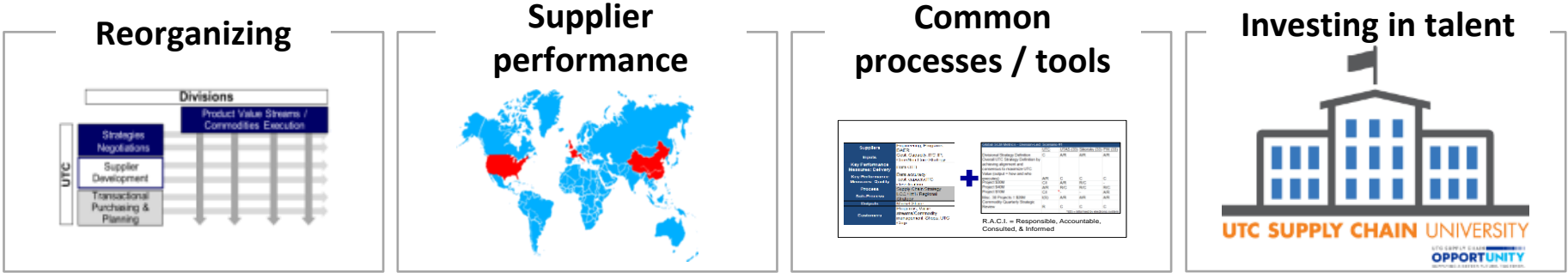
## Customer Impact



## Internal Processes



# UTC SUPPLY CHAIN TRANSFORMATION



Journey towards a world-class Supply Chain Enterprise System

# IT TRANSFORMATION ELEMENTS

## Spend Analytics



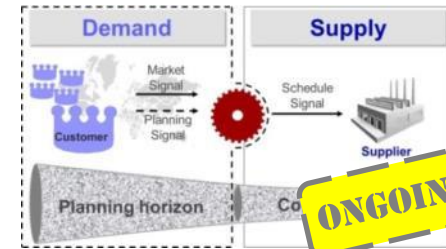
2014

## Contract Lifecycle Management (CLM)



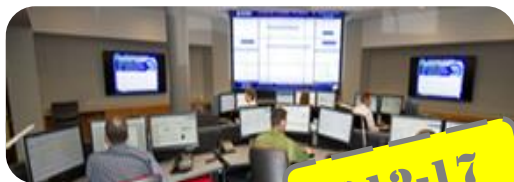
2015

## Demand & Material Management



ONGOING

## Command Centers



2012-17

## Supplier Portal



2015-17

## SAP



2016

# SOURCING PROCESS TRANSFORMATION

2014-15

## Strategy & Supplier Designation

Grow



Maintain



Exit



## Selection Criteria

Unitary cost + NRE

Total cost elements

Add'l costs

x Logistics costs

x Financial costs

x Performance costs

x certified GOLD

## RFQ & Contracts



Aligned UTC strategy & one common award process

# GOVERNANCE – TICKET TO ENTRY

2014-15

## One Company Approach

Productivity - 0 headwind & cost reduction

90+ day payment terms

OTD performance guarantees

Quality Notification (QN) charges

Minimum buffer stock

Supplier Gold commitment

## Supplier Gold Certification Benefits



Payment Terms

90 days



75 days

Buffer Stock

4 weeks



2 weeks

No Performance Guarantees / QN Admin. Charges



Supplier Selection Benefits / Business Opportunities

Total cost elements  
Rewards

- Unitary cost + NRE
- x Logistics costs
- x Financial costs
- x Performance costs

---

- x certified GOLD



## Cost reduction through productivity

Lean manufacturing

Technology & automation

Footprint optimization

Cost of Poor Quality (COPQ) reduction

Low Cost Sourcing (LCS)

Volume growth

**UT**<sup>V<sup>2</sup></sup> *Value*  
*x Velocity*  
United Technologies Corporation

**UT** **SMART***Choice*  
United Technologies Corporation

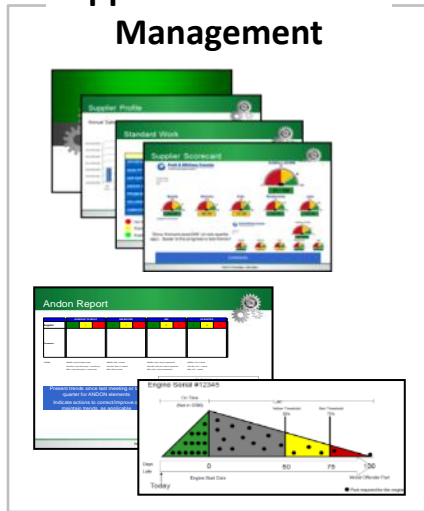
Driving year-over-year cost reduction

# ONE UTC SUPPLIER MANAGEMENT

## Supplier Relationship Management (SRM)

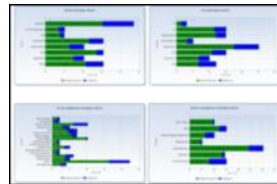
2015-16

### Supplier Performance Management



### Supplier Development

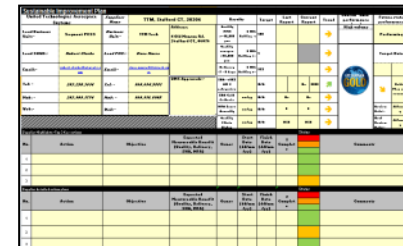
#### Supplier Health Assessment (SHA)



#### Supplier Dev. Priority Matrix



### Supplier Customer Improvement Plan (SCIP)



Supplier	Part	Issue	Root Cause	Impact	Severity	Resolution	Status	Completion Date
Supplier A	Part #12345	Quality Issue	Material Defect	High	Critical	Investigation in progress	Open	2015-12-31
Supplier B	Part #67890	Delivery Issue	Production Delay	Medium	High	Root cause identified	In Progress	2016-01-15
Supplier C	Part #11111	Cost Issue	Material Waste	Low	Medium	Cost reduction plan	Completed	2015-11-30
Supplier D	Part #22222	Process Issue	Process Variation	Medium	High	Process optimization	In Progress	2016-02-28

World-class collaborative standard work being deployed

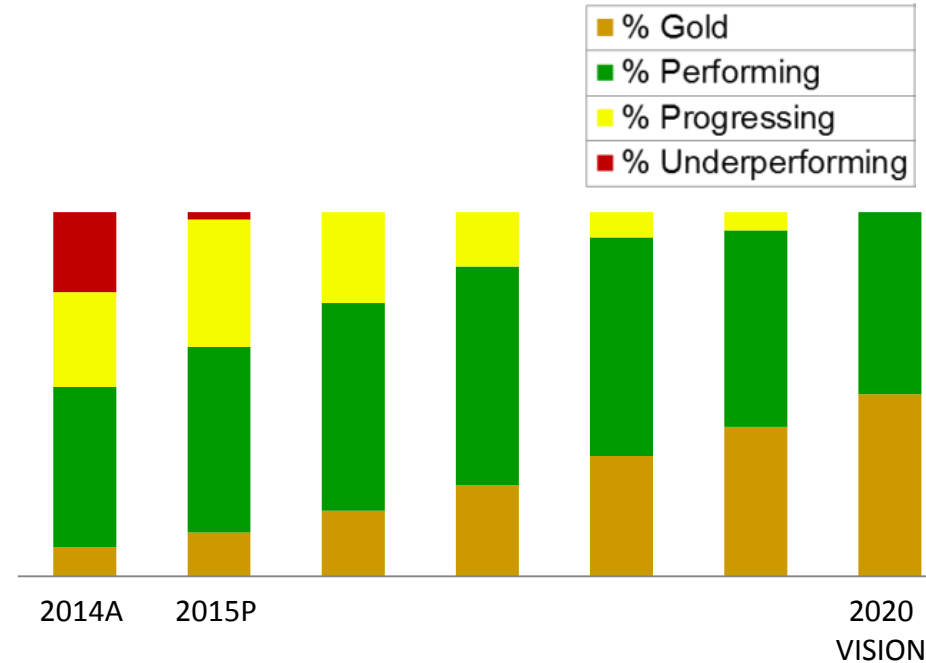
# UTC SUPPLIER GOLD VISION

## Expectations for suppliers

Exit Underperforming by EOY 2015

Performing status...then

Certify GOLD asap



Take the journey to Gold before it is too late

# REVAMPED SUPPLIER GOLD

## From “Recognition” to “Supplier Performance” program

Old



New



Not integrated with our processes

Sourcing processes

Contracts

Focus on Gold / Performing combined

Existing programs - top spend

Fully integrated with our processes

Clear sourcing process benefits

Standard contractual incentives

UTC policy obj. for Underperforming & Gold

New key programs required

# FUTURE SOURCING OPPORTUNITIES



CH53K



Raider / JMR



MA700



E2



VH-92



Small civil



ATEC engine



777X

## New Product Introduction Process



IPD	Phase 0		Phase 1		Phase 2		Phase 3		Phase 4	
	Concept Definition	Predefined Design	Predefined Design	Predefined Design	Predefined Design	Predefined Design	Predefined Design	Predefined Design	Predefined Design	Predefined Design
	Develop program to supply chain & quality related requirements & ensure flow-down	Knowledge gap assessment	Create Development & Production Strategy	Program Supply Chain Mgt & Quality Targets & Metrics (e.g. cost, quality, delivery)	Integrate a Supply Chain Mgt Program	Integrate Supply Chain Mgt Program	Finalize supplier selection & contract award	Finalize supplier selection & contract award	Finalize supplier selection & contract award	Finalize supplier selection & contract award
	Establish supplier CPX activities (include: MRP, MFG etc.)	Provide input on capability & productivity assessment	Refine sourcing strategy	Initial Development Sourcing Board	Update risk mitigation & milestone plans	Finalize supplier selection & contract award	Finalize supplier selection & contract award	Finalize supplier selection & contract award	Finalize supplier selection & contract award	Finalize supplier selection & contract award
	Support & validate core P&P scenarios	Feedback on productivity & cost to Design team	Production readiness review	Long term strategy & sourcing plans complete	Update risk mitigation & milestone plans	Finalize supplier selection & contract award	Finalize supplier selection & contract award	Finalize supplier selection & contract award	Finalize supplier selection & contract award	Finalize supplier selection & contract award
	Full P&P approval	Continuous Improvement (IND, VIA/E)	Long term sourcing plans finalized	Supplier performance management	Supplier performance management	Supplier performance management	Supplier performance management	Supplier performance management	Supplier performance management	Supplier performance management

Risk Management  
 NPI Sourcing  
 Process Cert / PPAP  
 Production Readiness  
 V2 & Governance  
 Supplier Gold

~\$2B potential annual awards still to come

## UTC Commitments

Investing in our processes & people

Steady journey toward a world-class supply chain

One Company is here to stay

Revamped Supplier Gold program with clear incentives



## Supplier Expectations

Supplier Gold certification

Invest in growth and production readiness

Year-over-year productivity commitments (V2 & SmartChoice)

One Company contract with UTC governance

Improving the way we work together



**United  
Technologies**

UTC SUPPLY CHAIN   
**OPPORTUNITY**  
SUPPLYING A BETTER FUTURE, TOGETHER.

# **SUPPLIER GOLD...THE WAY FORWARD**

---

Steve Bohlman, UTC Director, Supplier Performance

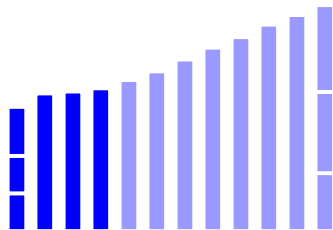
# WHY REVAMPED SUPPLIER GOLD

## Essential

Customers



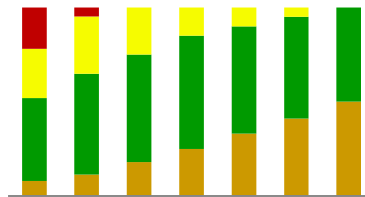
Growth



**Our Customers demand it**

## Committed

Performance



Corporate Citizen



Global Ethics & Compliance  
One World. One Code.



**We're raising the bar**

## Aligned

Processes



Joint improvement

Area	Target	Actual	Delta	Notes
Production	100%	98%	-2%	Minor delays
Quality	99%	99.5%	+0.5%	Improved
Cost	100%	102%	+2%	Exceeded target
Delivery	100%	100%	0%	On schedule
Customer Satisfaction	4.5	4.7	+0.2	Positive feedback

**Integrating GOLD into our processes**





# 2015 UTC Supplier Conference

April 29, 2015

UTC SUPPLY CHAIN   
**OPPORTUNITY**  
SUPPLYING A BETTER FUTURE, TOGETHER.



**United Technologies**

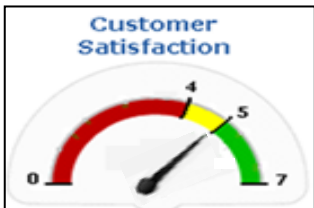
# NEW LOGO REPRESENTS OUR JOURNEY



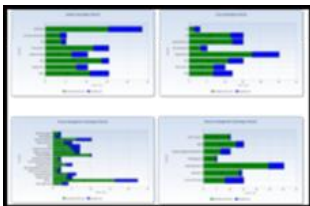
**UTC Supplier Gold**  
**The way forward**

# TWO KEYS TO REVAMPED SUPPLIER GOLD

## Improving our GOLD program

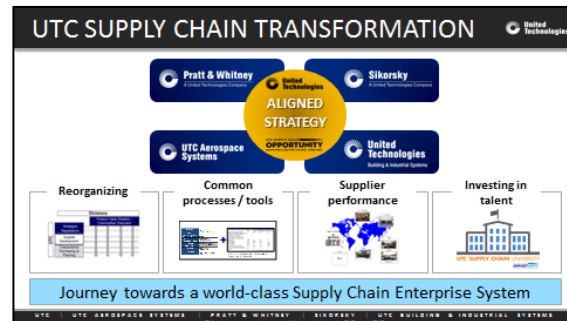


Supplier Health Assessment (SHA)



**UTC Supplier Gold**  
The way forward

## Making GOLD relevant for both of us



Integrating GOLD into the foundation of what we do together

# BUILDING GOLD INTO THE FOUNDATION



**UTC Supplier Gold**  
The way forward

## Key program alignment



New Product Introduction Process



Risk Management  
NPI Sourcing  
Process Cert / PPAP  
Production Readiness  
V2 & Governance  
Supplier Gold

## Strategy & Supplier Designation

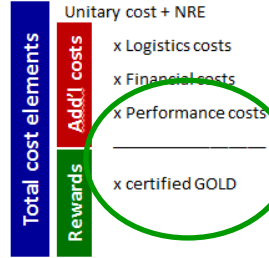
Grow

Maintain

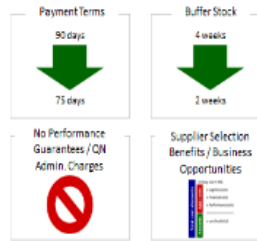
Exit



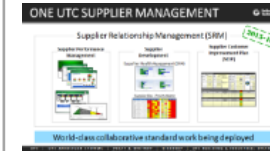
## Selection Criteria



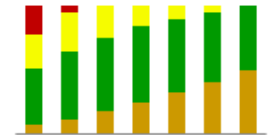
## Supplier Gold Certification Benefits / Contracts



## Relationship Management



## New Gold KPI



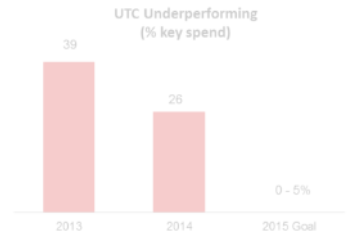
**Supplier Gold Program integrated into every step**

# CHANGES TO SUPPLIER GOLD PROGRAM

## Eliminating Underperforming

2015

Longer view  
Sustainment required



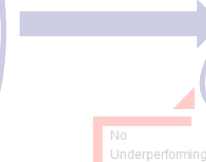
## Progression to Gold

2016-17

Customer Satisfaction



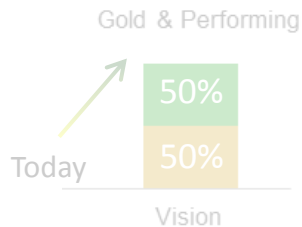
SHA



## Sustaining Gold

2015

18 months on-site recert  
Monthly leading KPI



## Revised Supplier Health Assessment (SHA)

2015

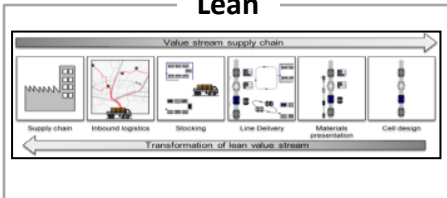
<b>PPAP</b> 	<b>Sub-tier Management</b> 	<b>Material Management</b> 
<b>Sustainability</b> 	<b>Business Continuity Planning</b> 	<b>Compliance / ITC</b> 

Driving the journey to meet our vision of a Gold supply chain

# WHAT / WHY THE SHA?

## 4 Basic Categories

### Lean



### Quality

APPENDIX D - Production Part Approval Process Approval Form

**PPAP APPROVAL**

1. Part Name	2. Customer Part Number	3. Part Number
4. Part Description	5. Part Number	6. Part Number
7. Part Number	8. Part Number	9. Part Number
10. Part Number	11. Part Number	12. Part Number

APPROVAL INFORMATION

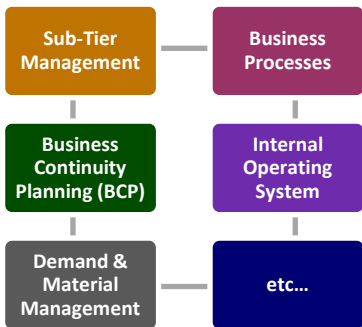
1. Representative Name: \_\_\_\_\_ 2. Signature: \_\_\_\_\_ 3. Date: \_\_\_\_\_

4. Part Approval: \_\_\_\_\_ 5. Part Approval: \_\_\_\_\_ 6. Part Approval: \_\_\_\_\_

7. Part Approval: \_\_\_\_\_ 8. Part Approval: \_\_\_\_\_ 9. Part Approval: \_\_\_\_\_

10. Part Approval: \_\_\_\_\_ 11. Part Approval: \_\_\_\_\_ 12. Part Approval: \_\_\_\_\_

### Process Management (Key elements)



### Resource Management & Corporate Responsibility



## Highlights systemic issues

### SUPPLIER PERFORMANCE ISSUES

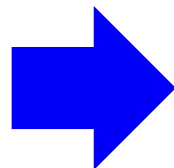
#### Key causes

- OTD
- Material planning / Lean flow
- Inconsistent processes and quality
- Capacity
- Sub-tier management



- #### Major Quality Escapes
- Major ethical compliance
  - Sub-tier management
  - Process control
  - Flowdowns (tier 1 & 2)

We have the tools in place to work together to fix these issues



+7% OTD

3.5x lower PPM

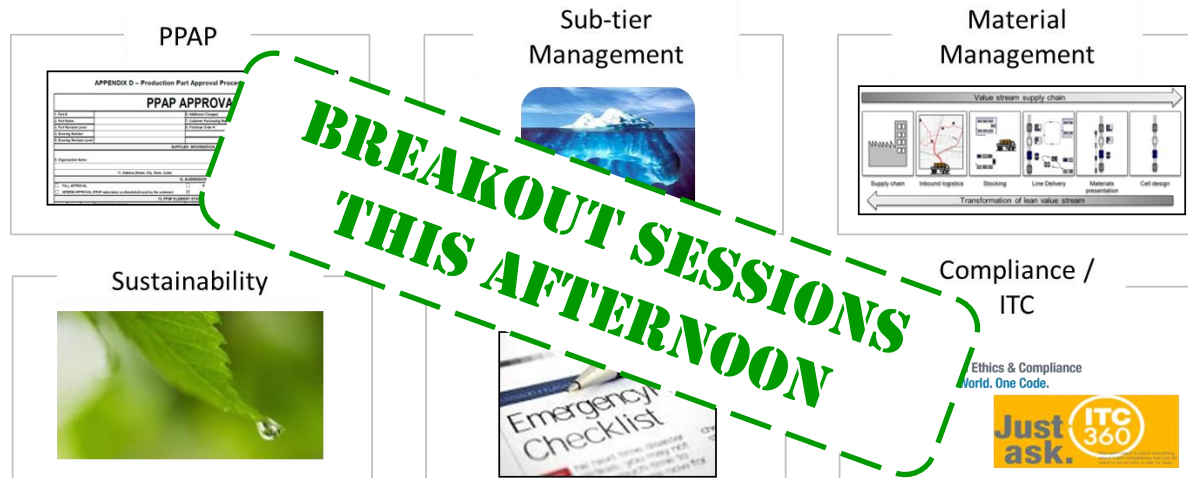
A tool to satisfy your customers and improve your bottom line

# KEY REVISED ELEMENTS OF SHA

## Driving sustainable performance

Drastically reduces escape risks

Aligned with UTC 2020 vision







*Available in Q3, but effective 2017*

Enhanced the tool to drive more value and eliminate risk

# PROGRESSION TO GOLD LEVEL



Supplier Gold Level	OTD	Quality	Customer Satisfaction (MFA)	Supplier Health Assessment (SHA)
<b>GOLD</b>	100%	0	6.0 out of 7 overall	> 80% score on all 4 categories & zero Gold questions missed
<b>PERFORMING</b>	≥ 95%	< 500	> 5.0 out of 7 	Zero Gold questions missed 
<b>PROGRESSING</b>	> 85%	< 1500	Gap plan in progress 	Gap plan in progress 
<b>UNDERPERFORMING</b>	≤ 85%	≥ 1,500	Start your journey	Start your journey

Early engagement of MFA and SHA to accelerate your journey to GOLD



What percentage of your sites have completed a Supplier Health Assessment (SHA)?

1: 75-100%

2: 50-74%

3: less than 50%

4: 0%

5: Don't know

# THERE ARE RESOURCES AVAILABLE

## Training material



## Professional Support Network



Networking opportunities available today

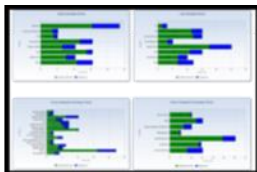
# SUMMARY

## 15 years of ACE



Achieving Competitive Excellence

The United Technologies Operating System



Identifies Gaps & Opportunities

## Address Gaps & Opportunities



Dedicated

Operating System / Standard Work

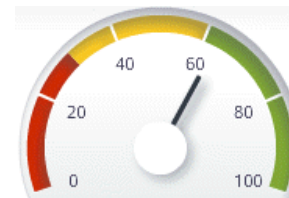
### Professional Support Network



## Deployment



Leadership



UTC Supplier Gold  
The way forward





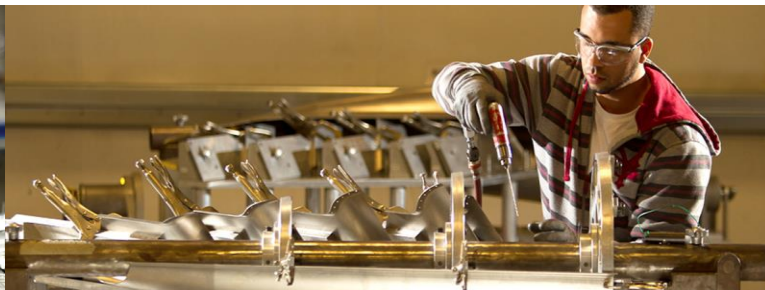
**United  
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UTC SUPPLY CHAIN   
**OPPORTUNITY**  
SUPPLYING A BETTER FUTURE, TOGETHER.

# SUPPLIER PERSPECTIVE

---

Tony Reardon, Chairman & CEO, Ducommun



# Ducommun Incorporated 2015 UTC CEO & Partner Conference

**Anthony J. Reardon**  
Chairman & Chief Executive Officer

# Ducommun History With UTC

## Business Units

- United Technologies
- Goodrich
- Hamilton Sundstrand
- Pratt & Whitney
- Sikorsky Aircraft

## Programs

- Black Hawk
- S-76
- CH-53 Super Stallion
- CH-53K Heavy Lift
- S-97 Raider
- F-35 JSF
- F100/F135
- F-16 Fighting Falcon
- 787 Dreamliner
- A320/A330 Programs

# Partnering with UTC – Our Relationship Objectives

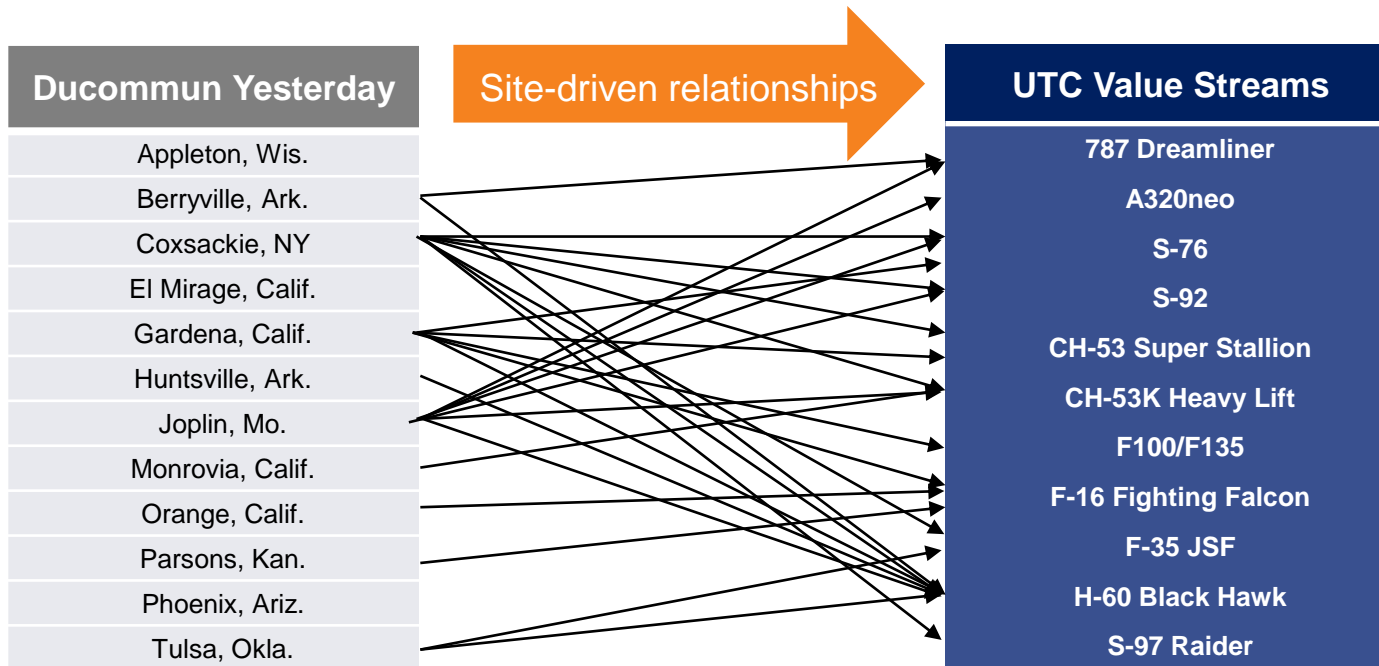


- UTV<sup>2</sup> Partnership
- Headwind Mitigation
- Supplier Gold Performance
- One Company MTA (Master Terms Agreement)
- Performance Guarantees
- Technology Collaboration
- Strong Engagement Strategy



- Profitable Growth
- Partnering on cost out
- One Company MTA (Master Terms Agreement)
- Technology Collaboration
- Long Term Technical Partnerships
- Integrated Solutions Provider

# Our Historical Relationship With UTC and Our Marketplace Needed Work





# Transforming How We Do Business

... To strategic business units that align capabilities and create synergies



## Electronic Systems Group

**Area of expertise:** Manufacturing services for interconnect, electronic and electromechanical applications

### Strategic Business Units:

Interconnect Solutions



Circuit Board Solutions

Aerospace Integrated Solutions



Industrial Integrated Solutions

## Advanced Systems Group

**Area of expertise:** High-tech proprietary systems and engineered products for defense, aerospace and industrial applications

### Strategic Business Units:

Engineered Solutions

Systems Development & Integration

## Structural Systems Group

**Area of expertise:** Structural components and assemblies for aerospace and other applications

### Strategic Business Units:

Structural Systems Solutions

Structural Assembly Solutions

Bonded Component Solutions

# Ducommun's Integration Of Capabilities and Strategy For UTC

## Ducommun Today

### Solutions-Focused

- Full-service collaborative approach
- Broad-based capabilities
  - Electronic solutions
  - Engineered solutions
  - Structural solutions
- Value-added services
  - Design for cost and manufacturing
  - Solutions innovation, design, and engineering
  - Lean enterprise engagement
  - Technology and product development

## *One-Ducommun Approach*

- *Capabilities*
- *Relationships*
- *Value Strategy*

## UTC Value Streams

787 Dreamliner

A320neo

S-76

S-92

CH-53 Super Stallion

CH-53K Heavy Lift

F100/F135

F-16 Fighting Falcon

F-35 JSF

H-60 Black Hawk

# Ducommun's Path to Partnership

- Commitment to Gold performance at all sites that support UTC
- Collaboration on cost targets and cost strategy for existing and new business
- Negotiated One Company MTA (Master Terms Agreement)
- New business awards for Ducommun based on demonstrated value and UTV<sup>2</sup> benefits

***Committed team of Ducommun and UTC partners collaborated over 14 months to deliver win-win UTV<sup>2</sup> results encompassing 22 contract opportunities***

# One Company Agreement = New Strategic Partnership

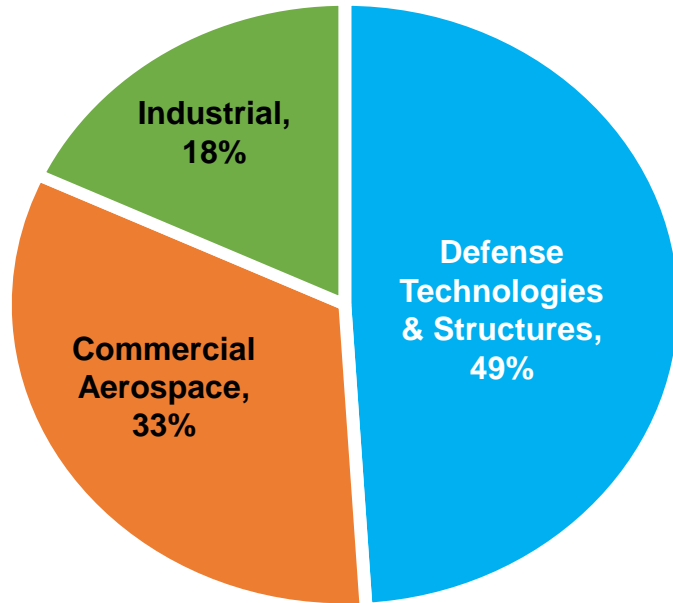
- Significant milestone in Ducommun's growth strategy
  - Expands current involvement on key programs with UTC
  - Opens new opportunities to provide electronic and structural assemblies across UTC's aerospace business units
- Commitment to world-class quality and delivery at a competitive cost
- Committed to expanding Gold status to all our sites that support UTC

# Ducommun Overview

- Founded in 1849
- Oldest company in California
- Ducommun is a global leader in providing innovative manufacturing solutions for the aerospace, defense and industrial markets
  - Complex electronic, engineered and structural applications
  - Broad capabilities support more advanced, higher value-added Tier 2 systems and assemblies
  - High-mix/low-volume – Focused, niche approach in sync with growing market demand
  - Long-term relationships with blue-chip customers
- 3,200 employees companywide

# Ducommun at a Glance

2014 Sales: \$742 Million



## Key Aerospace & Defense Customers



# Using Our Guiding Principles and Operating System as Our Path to Gold

## THE DUCOMMUN WAY

Honesty • Professionalism • Respect • Trust • Teamwork



# Thank you!





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Technologies**

UTC SUPPLY CHAIN   
**OPPORTUNITY**  
SUPPLYING A BETTER FUTURE, TOGETHER.

# **UTC BUSINESS UNIT PERSPECTIVE**

---

Paolo Dal Cin, UTAS Vice President, Operations & Supply Chain

John Palumbo, Sikorsky Vice President, Operations

Benoit Beaudoin, P&W Canada Vice President, Operations



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# UTC AEROSPACE SYSTEMS OPERATIONS & SUPPLY CHAIN

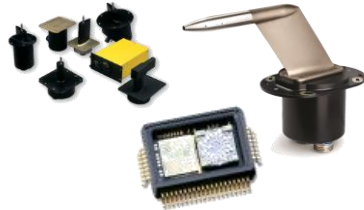
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Paolo Dal Cin, VP Operations & Supply Chain

Electric Systems



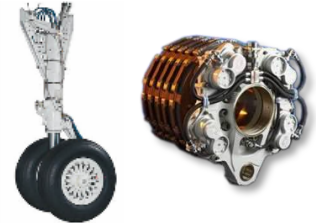
Sensors &  
Integrated Systems



Aerostructures



Landing Systems



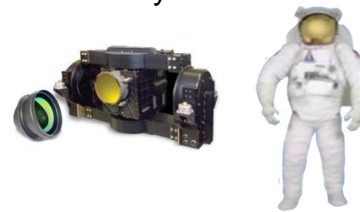
Interiors



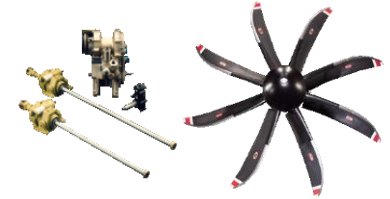
Engine &  
Environmental  
Control Systems



ISR & Space  
Systems

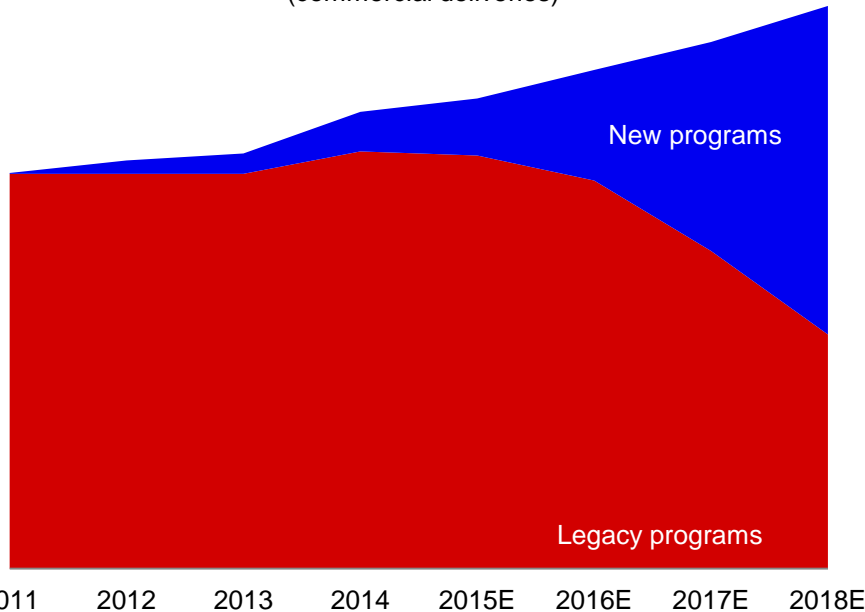


Actuation &  
Propeller Systems



## New programs fueling our growth

New program ramp  
(commercial deliveries)



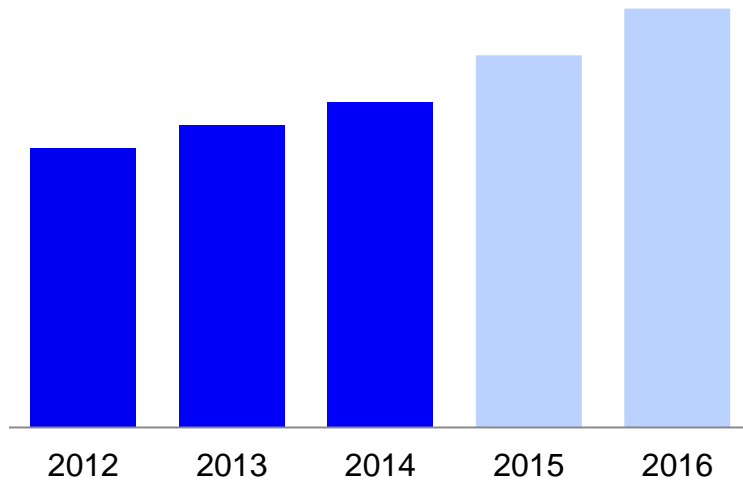
■ Achieved first flight

■ First flight planned 2015



## Global manufacturing growth

Manufacturing hours

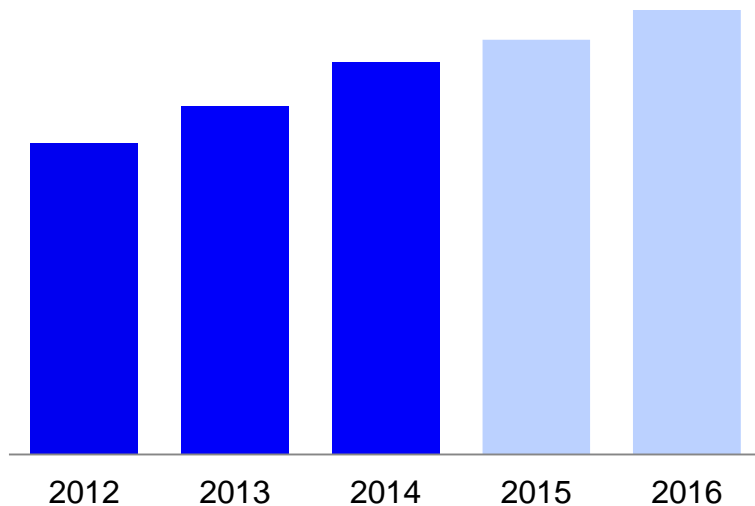


Global footprint



## Supply chain

Product spend



Organization



Sourcing



Commodity and contracts

New product introduction & delivery



Functional business unit

Supplier performance



Regions

~400M pieces delivered per year

## Lean operations system

### Physical cell transformation



~100 cells active in cell transformation process

Cell Lean redesign and kitting

### Strengthened materials management



- ✓ Yield
- ✓ Supplier performance
- ✓ Usage and cost

Plan for every part

### Supplier integration

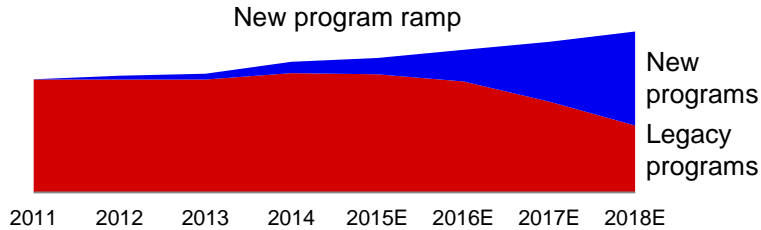


Forward stocking of material

Line back logistics

## Supplier integration essentials

### Capacity alignment

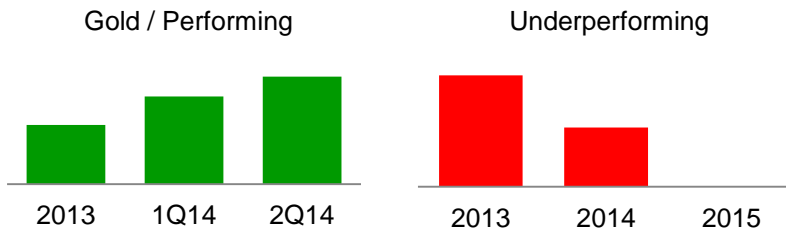


### Producibility



19 elements

### Performance



### Forward stocking

100% available to pull







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# **SIKORSKY AIRCRAFT CORPORATION**

---

John Henry Palumbo, Senior Vice President, Operations

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# HIGHLIGHTS

Four strategic wins

Canadian contract amendment

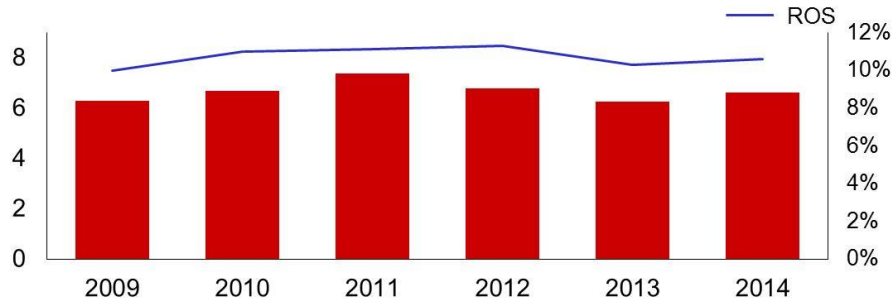
Program performance

Operations execution

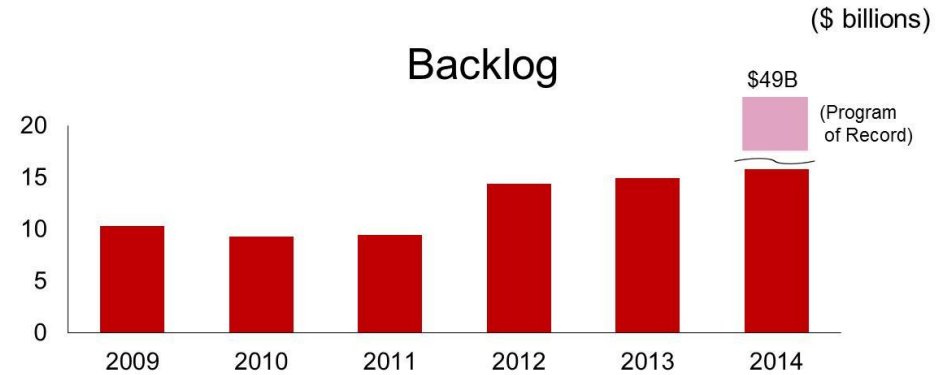


# RECORD BACKLOG

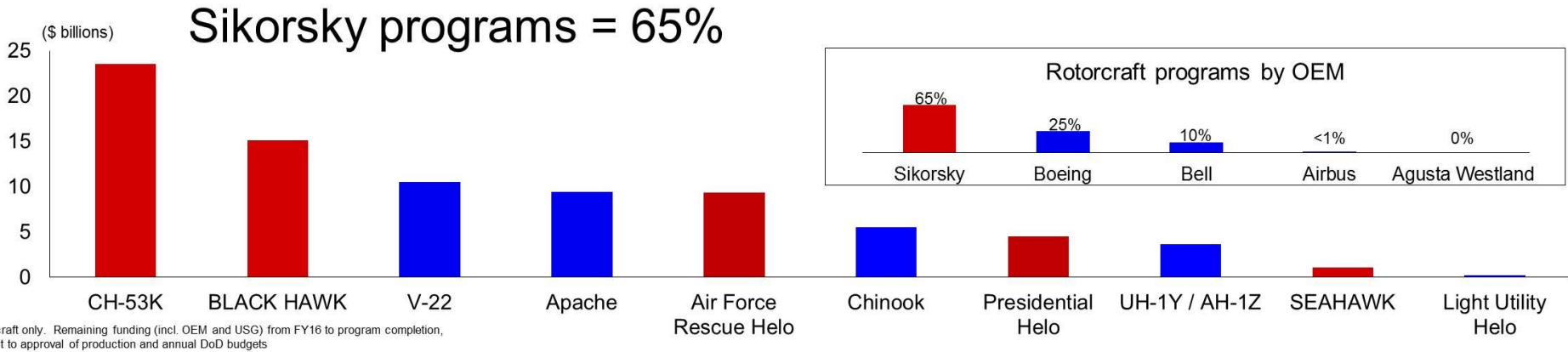
## Sales



## Backlog



# U.S. DoD PROGRAMS OF RECORD



# MAJOR PLATFORMS

## Military

BLACK HAWK



CH-53K



SEAHAWK®



CH-148



Executive Transport



S-70i™



## Commercial

S-76™



S-92®



# OPERATIONS HIGHLIGHTS

+

## Productivity

100% OTD



S-92<sup>®</sup>



UH/HH-60M



MH-60S



MH-60R

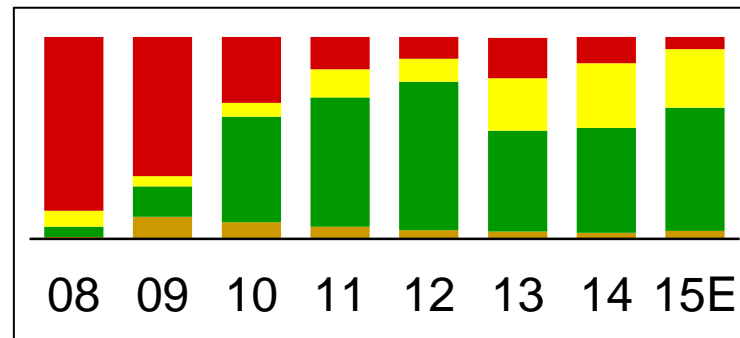
~

## Supplier OTD

-

## Supplier quality

Supplier Gold



Gold

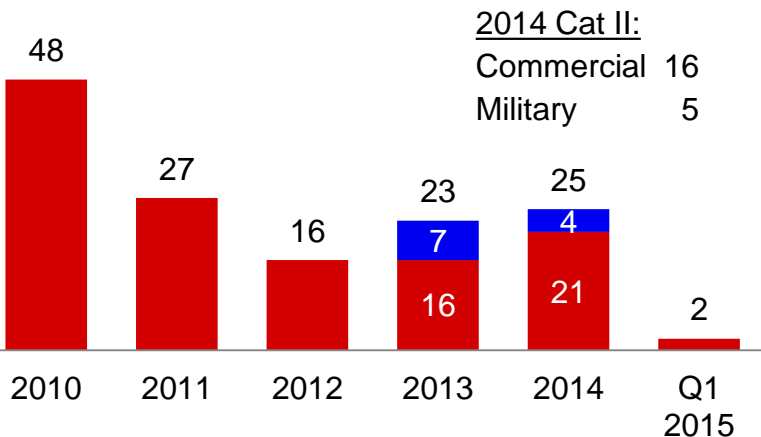
Performing

Progressing

Underperforming

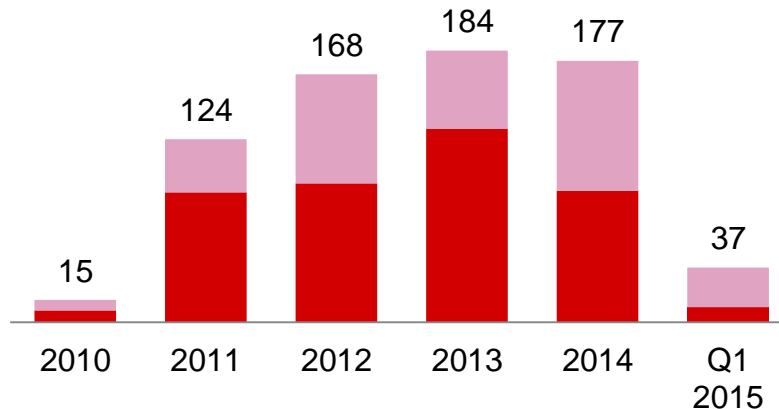
## Significant Customer Escapes

- Category I & II
- Business Process



## Supplier Notification of Potential Escapes (NOPEs)

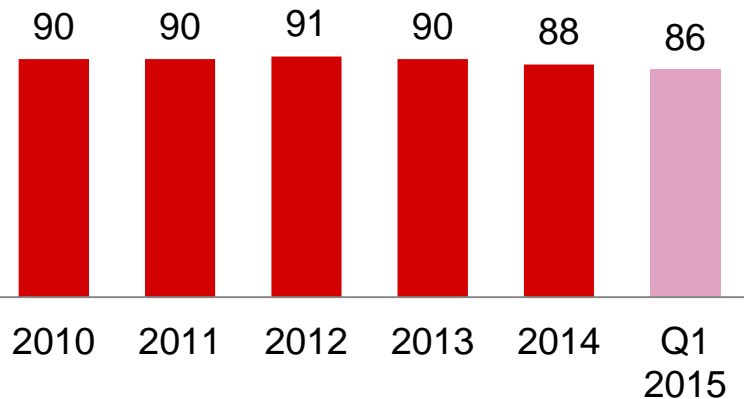
- Confirmed
- No Escape





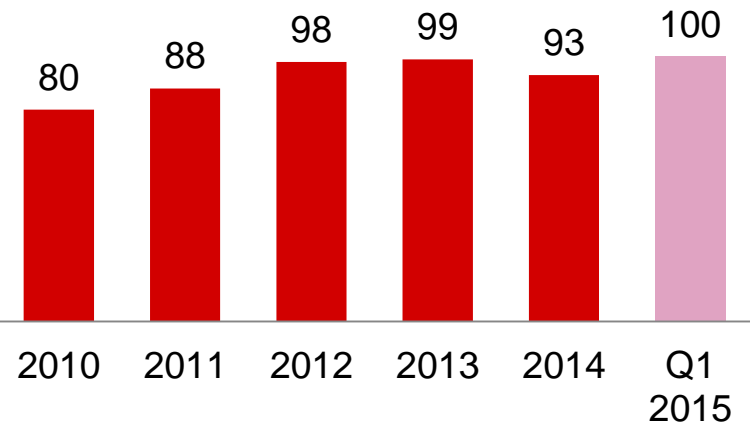
## All Suppliers

(MRP)



## Large Aircraft

(Delivery to contract)



# EXPECTATIONS

Perfect Quality ... always

On-time delivery ... every time

Continuous cost improvement





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UTC SUPPLY CHAIN   
**OPPORTUNITY**  
SUPPLYING A BETTER FUTURE, TOGETHER.

# **PRATT & WHITNEY OPERATIONS**

---

Benoit Beaudoin

Vice President P&WC Ops & NGPF Industrialization

## Ramping up to face the growth

### Commercial Engines



### Military Engines



### P&W Canada



# CERTIFICATION PROGRAMS ON TRACK

## PurePower<sup>®</sup> Geared Turbofan<sup>™</sup> engine

24K – 35K thrust

Airbus A320neo  
PW1100G-JM



Certified

Irkut MC-21  
PW1400G



18K – 24K thrust

Bombardier CSeries  
PW1500G



Certified

Embraer 190/195-E2  
PW1900G



14K – 17K thrust

Mitsubishi Regional Jet  
PW1200G



In development

Embraer 175-E2  
PW1700G



Testing summary

Over  
31,000



Total  
cycles

Over  
16,000



Total  
hours

# CERTIFICATION PROGRAMS ON TRACK

## GTF engine – industry leading performance

### Fuel efficiency



**16%+**

fuel reduction

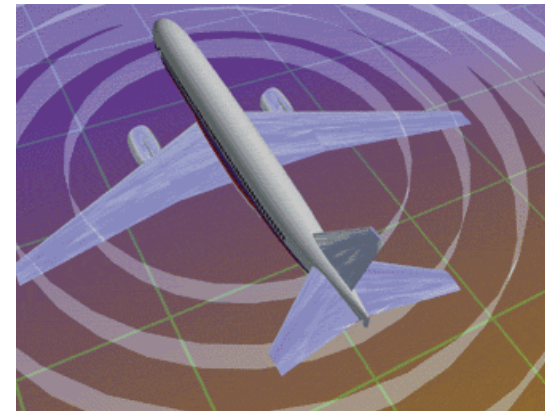
### Emissions reduction



**50%+**

emissions reduction

### Noise reduction



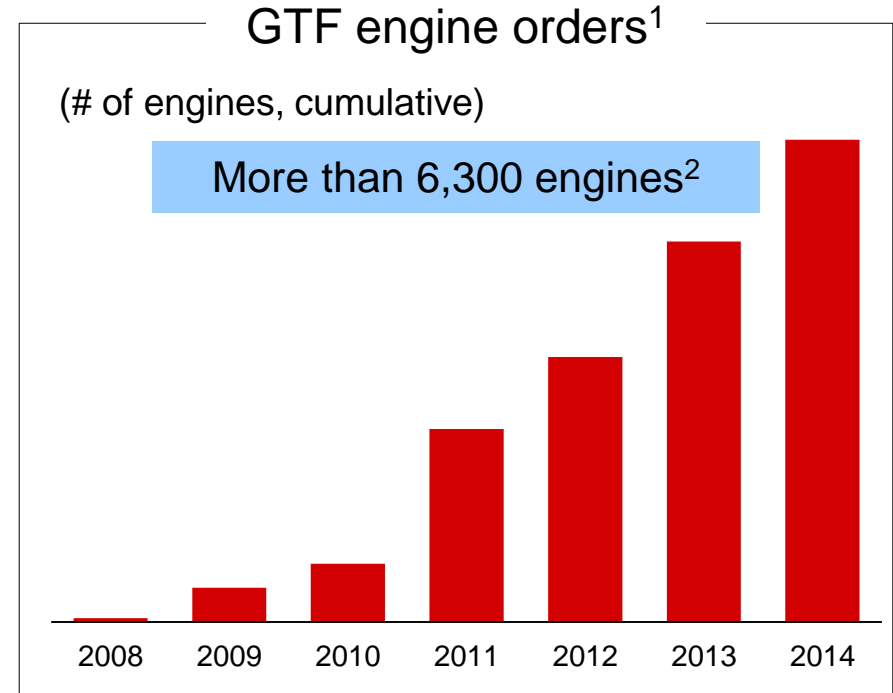
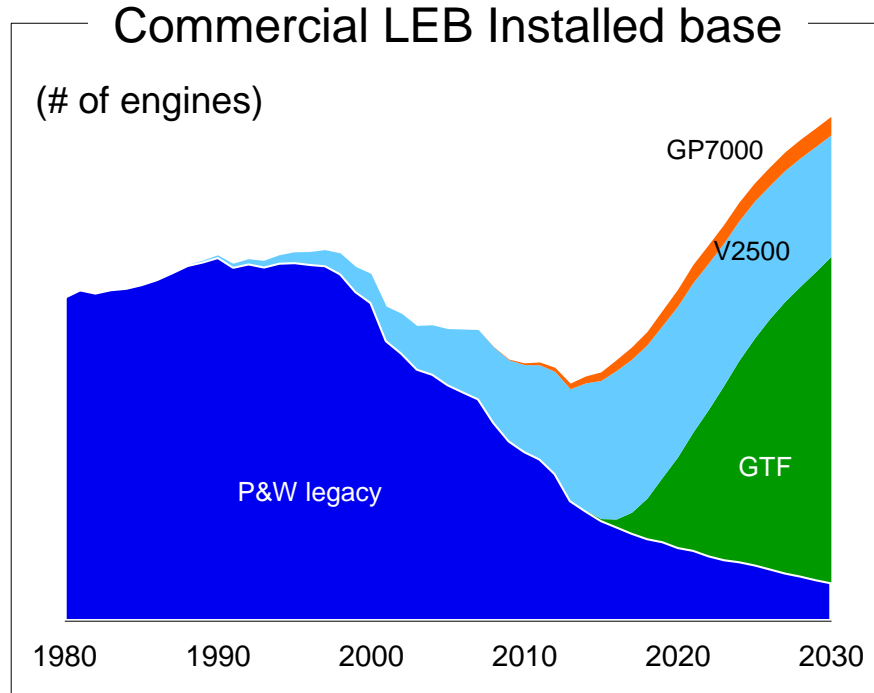
**75%+**

noise reduction

Best in class, best value ... by far

# CERTIFICATION PROGRAMS ON TRACK

## Commercial outlook – growing base and backlog



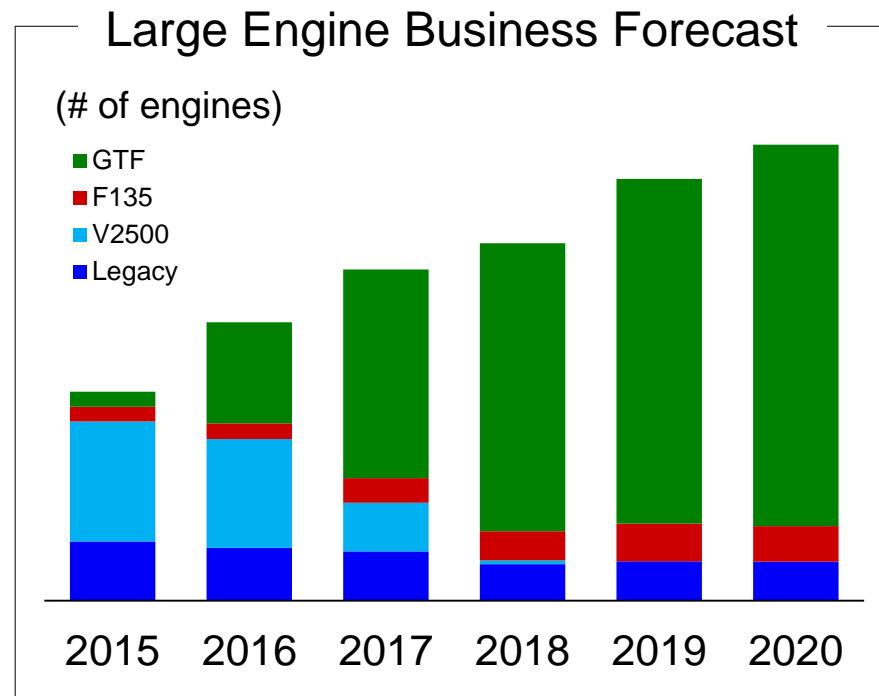
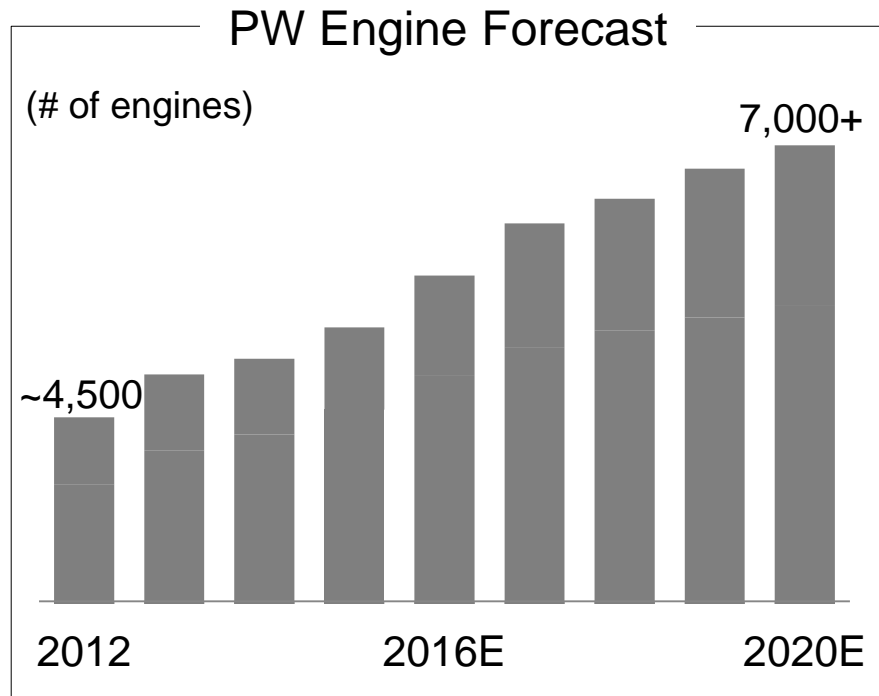
<sup>1</sup> Announced and unannounced firm engine orders, including options

<sup>2</sup> Data through February 2015

# PREPARED FOR GTF ENTRY INTO SERVICE



## 2x supplier spend growth



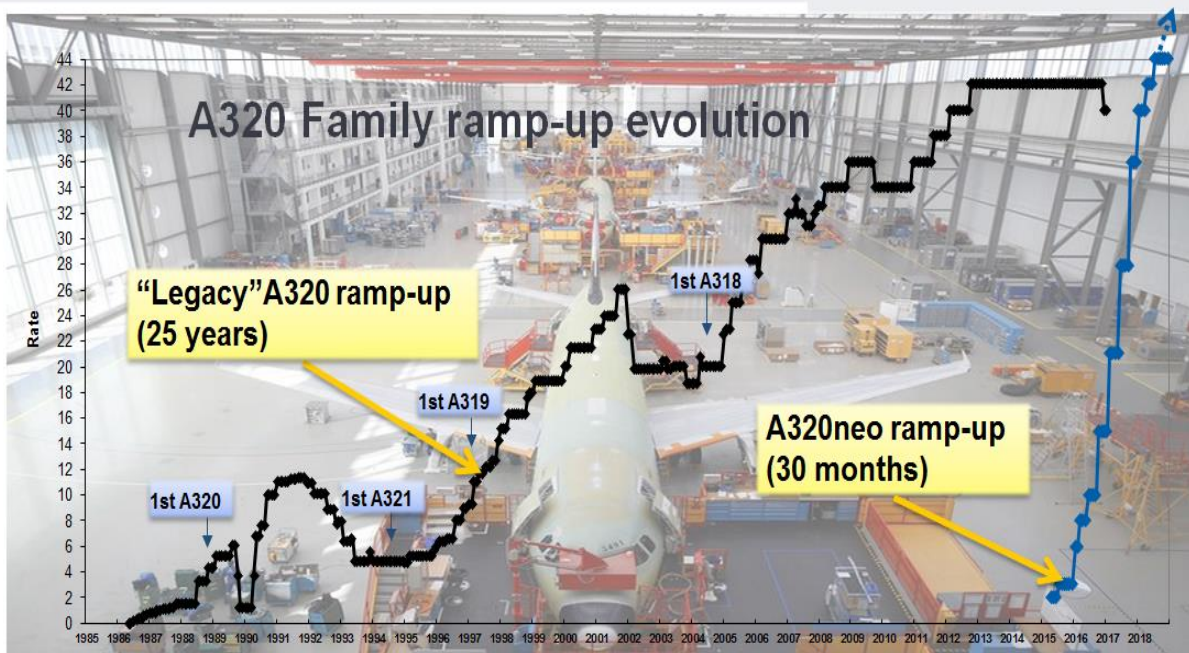


# MEETING CUSTOMERS EXPECTATIONS

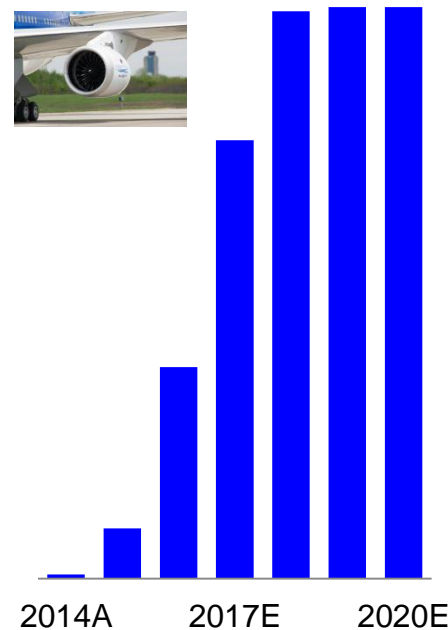
## A320neo ramp up is NOW!



**A320neo** - Industrial maturity is key



### Annual Engine Deliveries PW1100G-JM



# P&W GLOBAL INVESTMENT

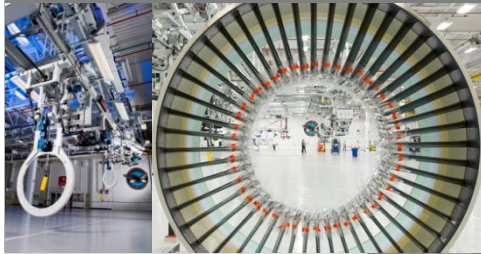
## Over \$1B in new programs



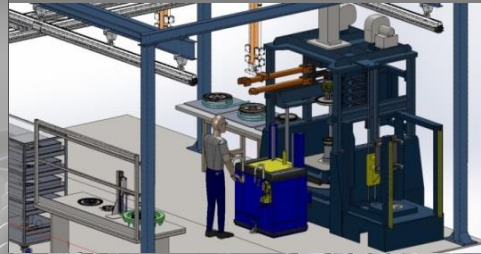
# MANUFACTURING TECHNOLOGY

## Innovation deployment

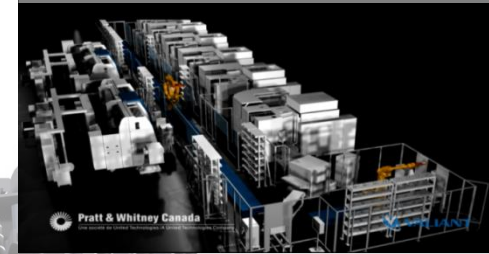
### Horizontal Assembly Line



### Semi-automated Assembly



### Intelligent Cells



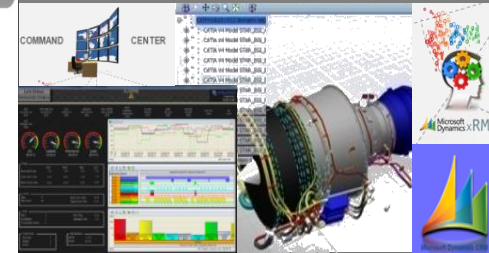
### Advanced Coatings



### Material Logistics

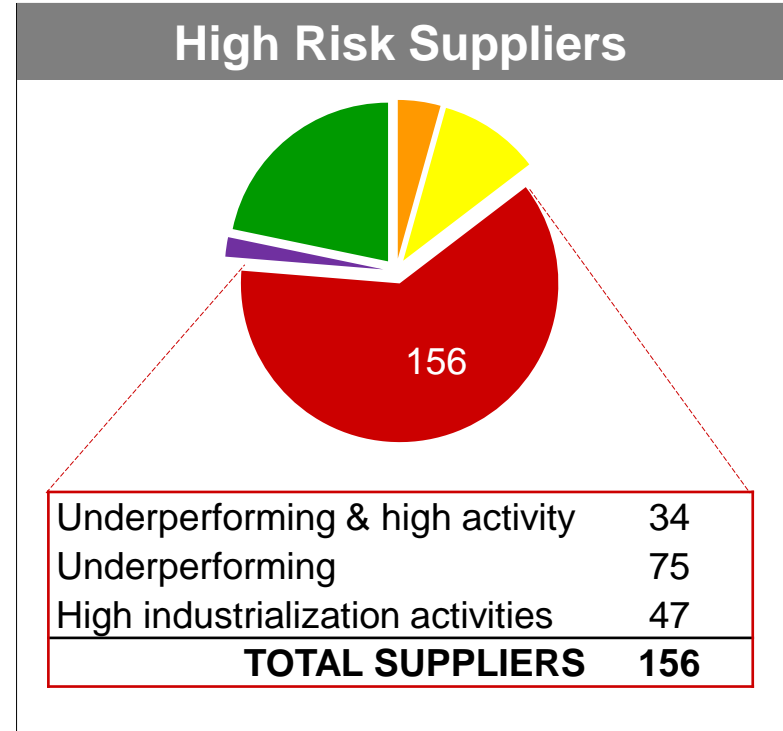
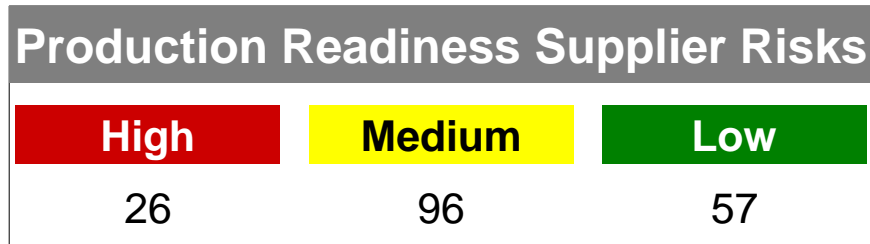
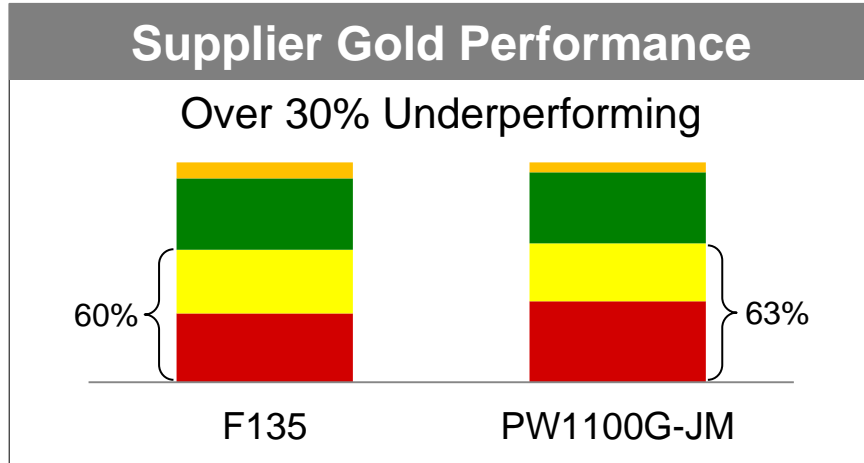


### Big Data & Analytics



# OUR CHALLENGES

## Underperforming & high risk suppliers



# INDUSTRIALIZATION READINESS

## Supply-based focused activities



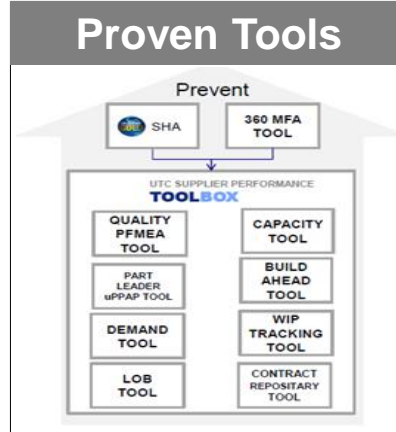
**Dedicated Skills**

PIPT-ICMT-Regional Offices



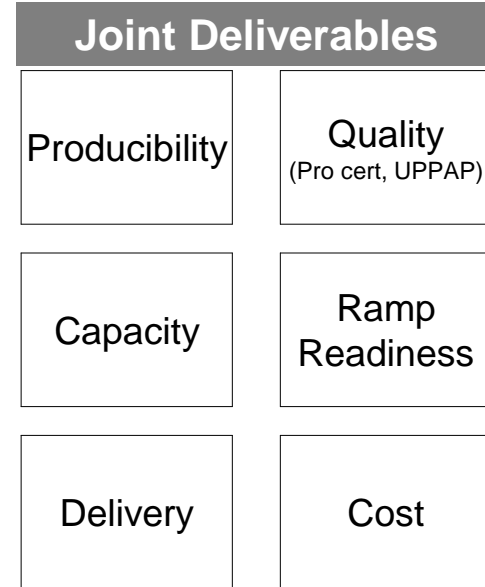
**Regional Offices**

7 Global Hubs



**Proven Tools**

7-step Quality Plan



100+ Suppliers Events  
460 Production readiness assessments  
500 parts on "Boost" validation  
Senior Management Meetings

# RISING UP TO THE CHALLENGE



Be personally committed

Demonstrate capability to meet the ramp

Leverage technology to drive quality, cost & productivity

One common objective, exceed customer expectations.



**United  
Technologies**

UTC SUPPLY CHAIN   
**OPPORTUNITY**  
SUPPLYING A BETTER FUTURE, TOGETHER.

# SUPPLY CHAIN PANEL DISCUSSION

Interactive Q&A with audience and UTC business unit  
Vice Presidents of Operations and Supply Chain

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Paolo Dal Cin

John Palumbo

Benoit Beaudoin

Rishi Grover

Janet Duffey

Sergio Loureiro

# QUESTION?

If you have a question, please submit it to:

[OpportUNITYfeedback@utc.com](mailto:OpportUNITYfeedback@utc.com)





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## **CLOSING COMMENTS**

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Dave Hess, UTC Sr. Vice President,  
Aerospace Business Development

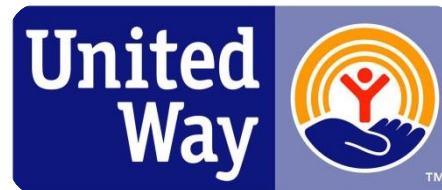
# MARK YOUR 2016 CALENDARS...

## 2016 UTC Supplier Forum



**May 11**

## 2016 UTC Operations United Way Golf Tournament



**May 12**



# 2015 UTC Supplier Conference

April 29, 2015

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