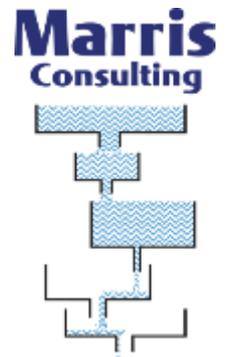




# AEROSUD

**Aerosud**  
a Theory Of Constraints  
pearl in South Africa

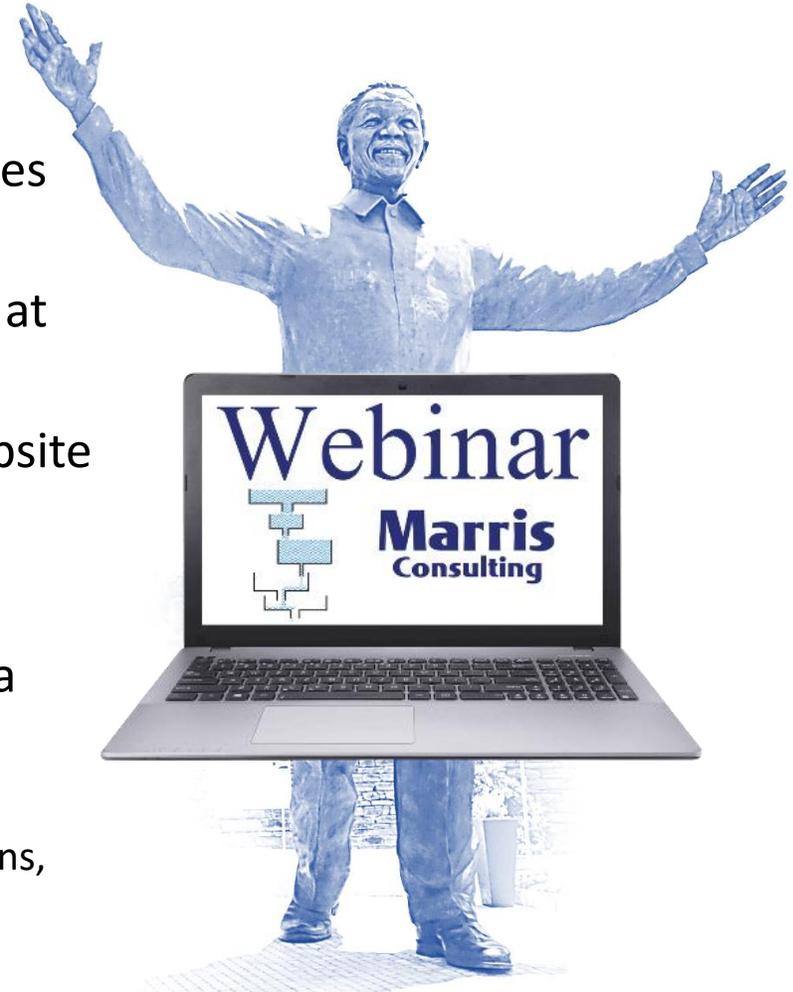
Webinar



Paris, Wednesday 10<sup>th</sup> June 2020  
Version 1.0

# Organization of the webinar

- A webinar presented by Aerosud after a very short introduction by Philip Marris, CEO Marris Consulting
- Presentation : 60 minutes
- Followed by a Questions & Answers session: 30 minutes
- You can ask questions and make written comments throughout the webinar using the "Q. and A." feature at the bottom of the screen (mouse over).
- The presentation material will be available on our website at the end of this webinar.
- There will be surveys during the webinar.
- The webinar is managed by 2 people, Philip Marris & a webinar manager, whose roles are:
  - To read the written questions as the webinar progresses
  - To manage the questions and answers session (choice of questions, opening / closing the microphone, etc...)



# Aerosud - Theory Of Constraints pearl in South-Africa



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Built for Results

TOC, Way of life

Built to last

Thank You



Presenter for this section:  
**Johan Steyn**



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Adapting to a "NEW NORMAL"

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Thank You

You captains  
for this flight



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**Operations System Manager**  
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## Key Characteristics



employ **660** people

**\$ 70 Mil** annual turnover

investment in R&D **6%**



**28 years** experience



**15** local sub-tier suppliers

**300** international & local suppliers



local added value **40%**



**2016** - DTI Manufacturer of the year  
**2017** - DTI Exporter of the year  
**2018** - SADC Quality Award

**AIRBUS**



Built to Fly | Build Smart | Built on Passion



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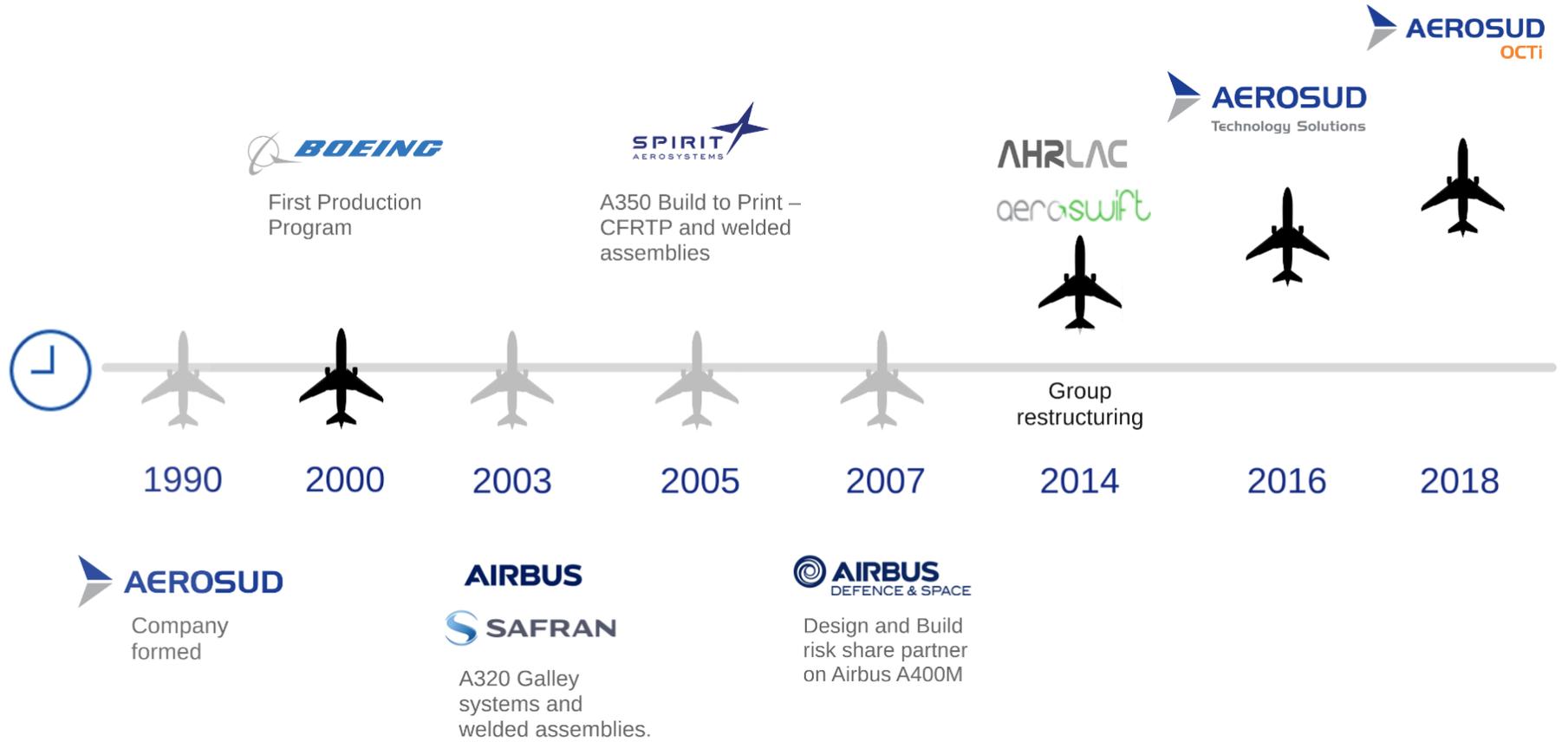
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Built to Fly | Build Smart | Built on Passion

## The Road We travelled



**AEROSUD**  
Company formed

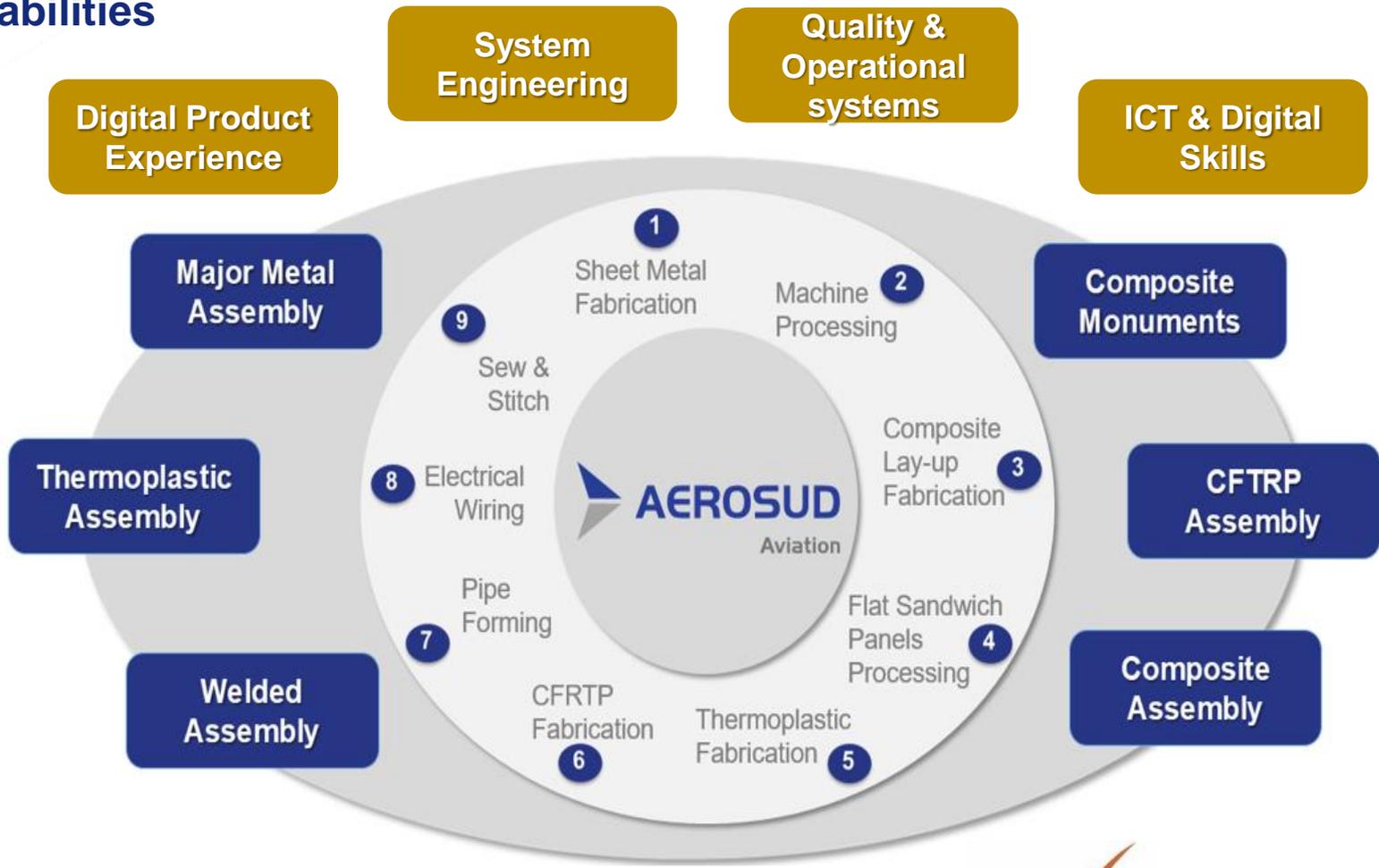
**AIRBUS**  
**SAFRAN**  
A320 Galley systems and welded assemblies.

**AIRBUS**  
DEFENCE & SPACE  
Design and Build risk share partner on Airbus A400M

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## Core capabilities



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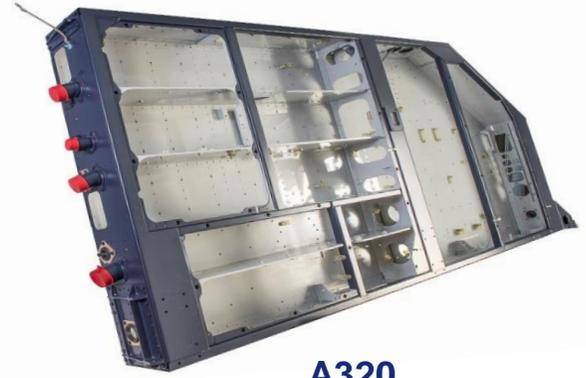
## Typical Products Manufactured



**A320**  
Track Can



**A400M**  
4<sup>th</sup> occupant seat



**A320**  
VU Cockpit unit



**A400M**  
Cockpit Linings



**A350**  
Track Can



**A400M**  
Galley



**A400M**  
Wing Tip



**B737**  
Drip Trays

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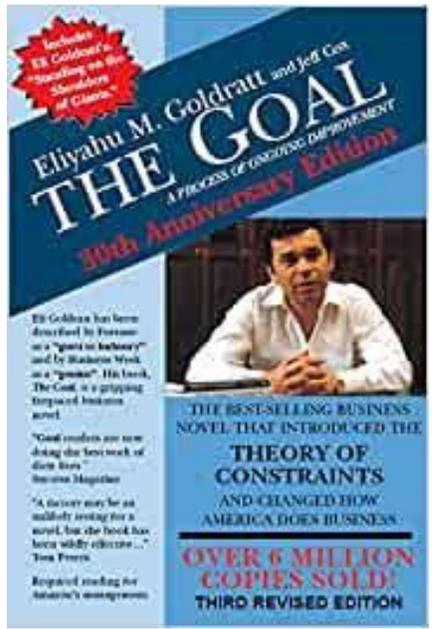
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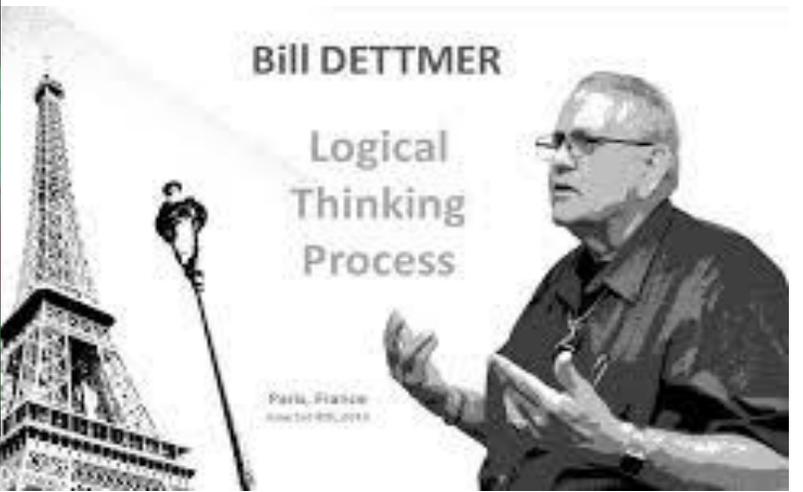
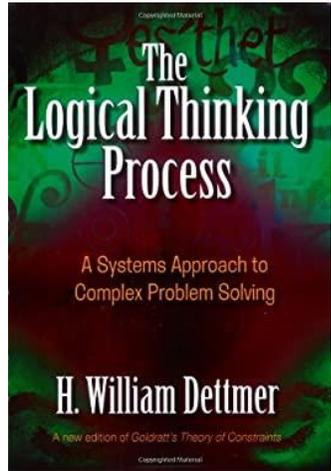
## Setting our Company goal



We read the Goal in 2008



We used a Goal Tree to create and formalise our company goal on a single page



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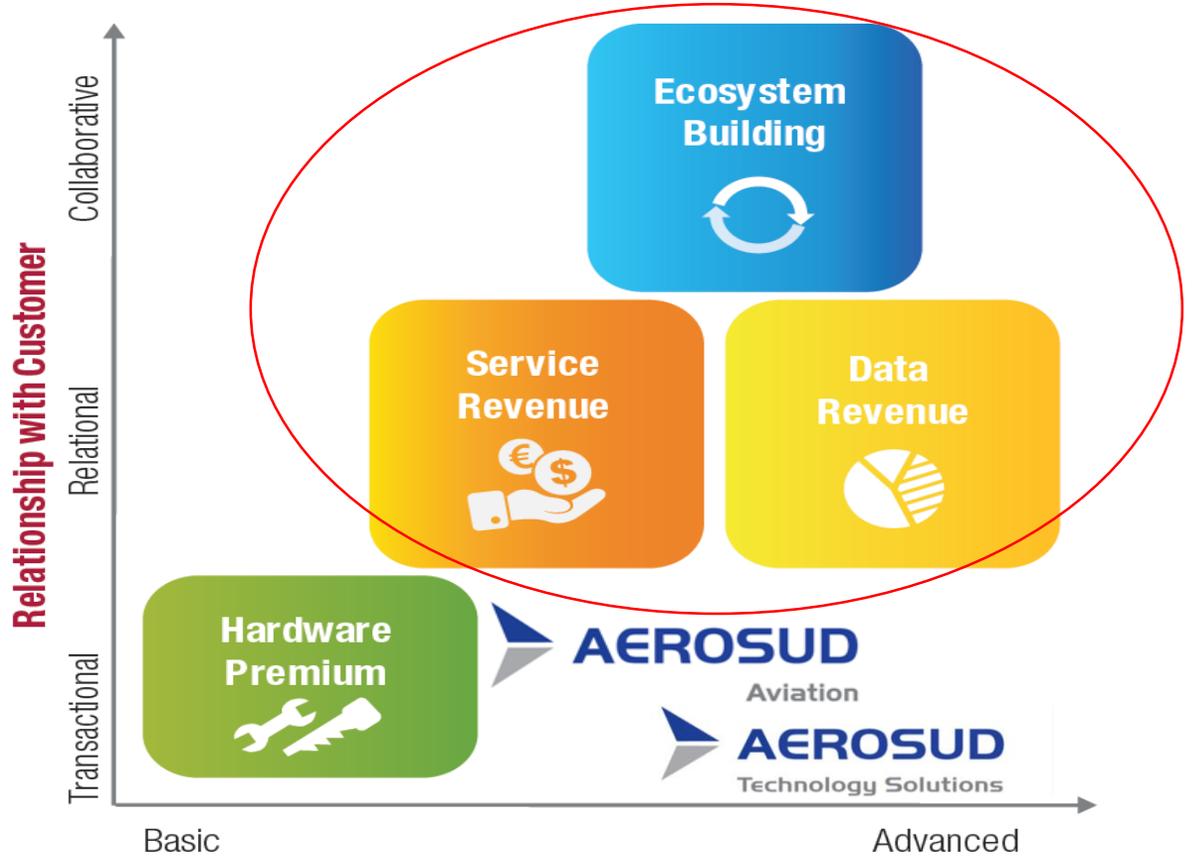
Thank You

## Build & Capitalise

### 2018 Goal Tree review

In-depth Business Review

Accelerating Digital offering



Complexity of IoT Monetization Model

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Presenter for this section:  
**André Tustin**



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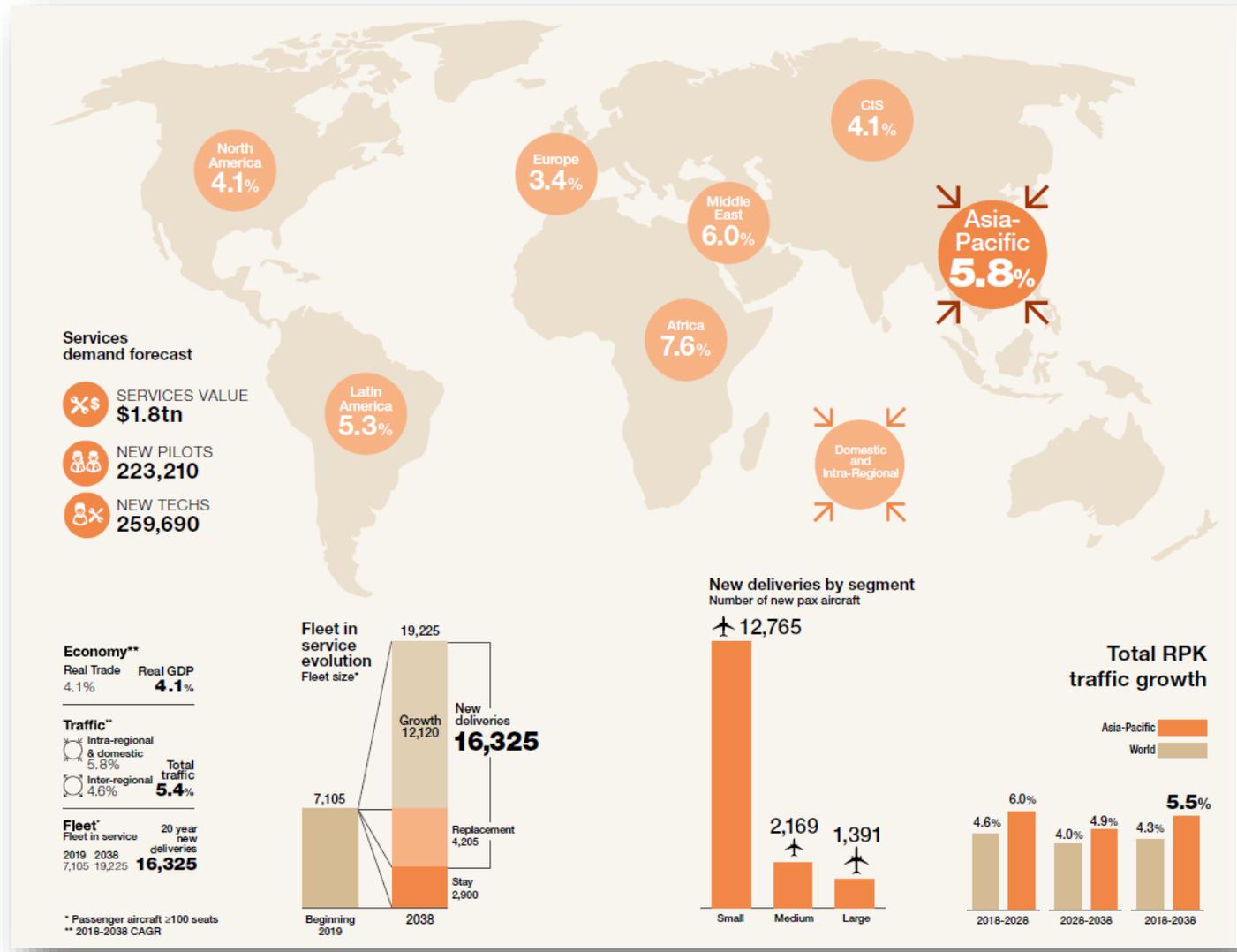
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## Market Reality (Pre COVID-19)

- 40% Rate Increase
- 20% Cost Reduction drive
- Global Collaboration
- Innovation



Source: Airbus Global Market Forecast

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**Effects of  
Market Reality  
(Pre COVID-19)**

Global low cost  
sourcing

Price reduction  
drives

Alternative supplier drive

Industry 4.0

Efficiency drive

**Resulting Conflict:**

**Profitability vs Reliability**

Disruptive Manufacturing  
practices

Increased quality audits

Global low cost  
sourcing

Open book pricing

Technology

Risk management  
oversight

Inefficient supply chain actions

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Built to Fly | Build Smart | Built on Passion

To survive and thrive  
in this market ...

## Critical Success Factors for Aircraft Manufacturers are:



- Produce more (increase throughput)
- Reduce WIP for speed and \$\$\$
- Improve efficiency to reduce cost



## The Theory of Constraints has a great track record of rapidly:

- Increasing Throughput
- Reducing Investment and WIP
- Improving flow
- Improving efficiency  
(Throughput / Operating Expense)



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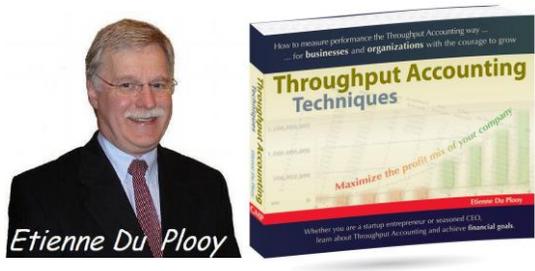
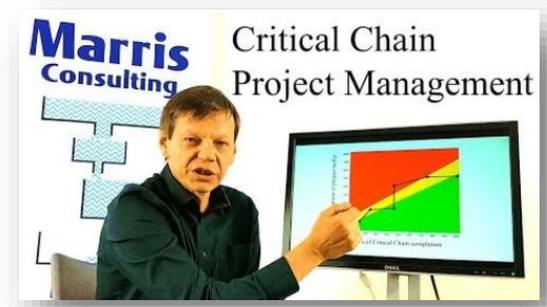
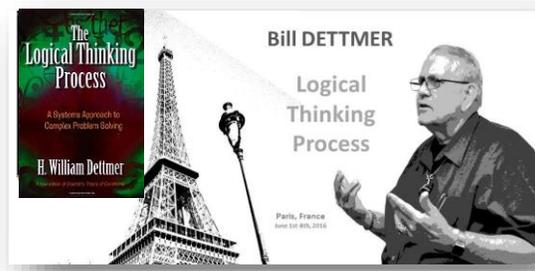
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Thank You

We partner with the best  
Global TOC consultants

### Note:

We are not "TOC purists". We apply and practice TOC principles in combination with other business principles to meet our business needs.



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## Using TOC in Strategy-, Operations- and Culture development

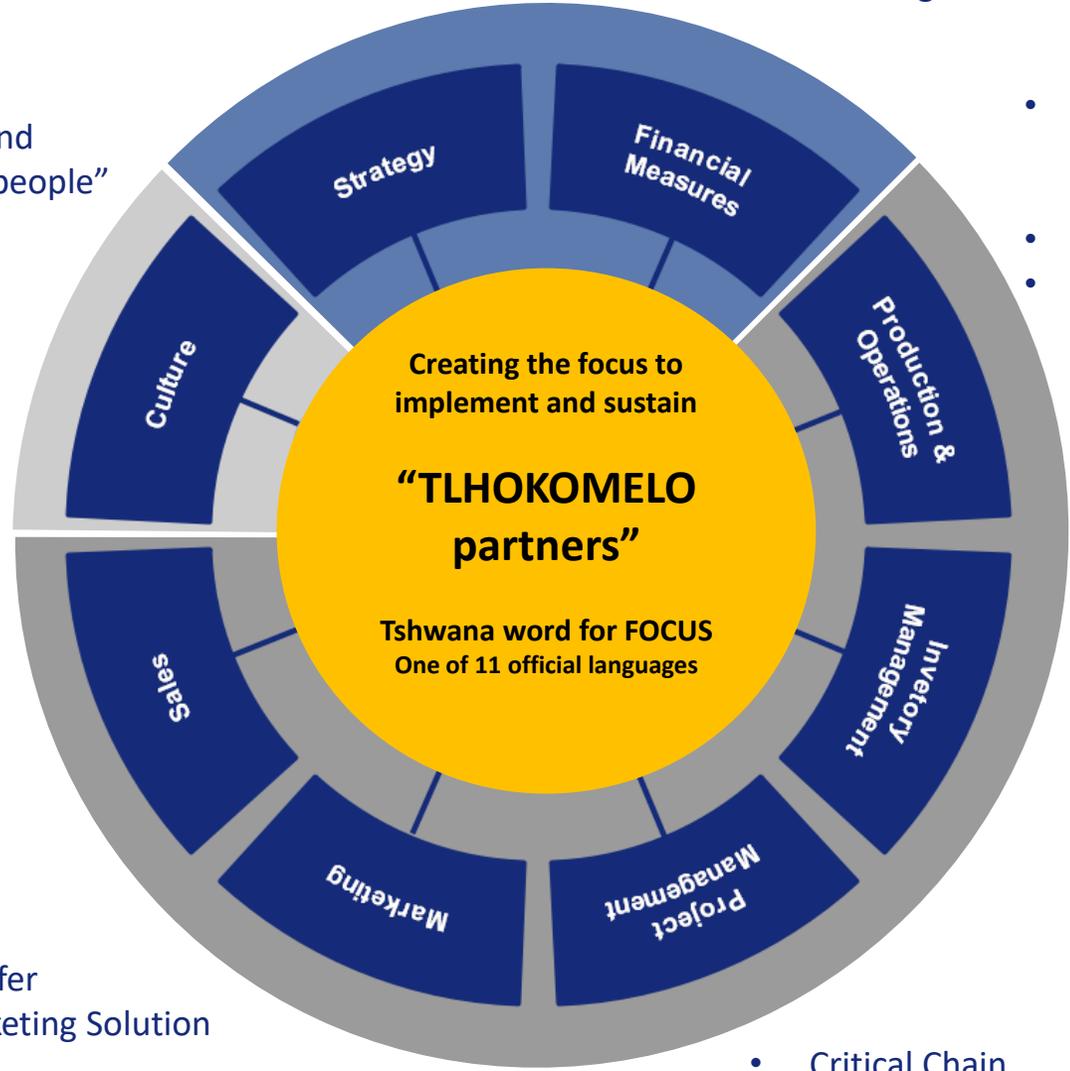


- S & T Tree  
"Inspiring and Managing people"

- Unrefusable offer
- Sales and Marketing Solution

- Goal Tree

- Throughput Accounting



- Critical Constraint Resource Management
- 5 Focus Steps
- Lean

- Buffer Management



- Critical Chain Project Management

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## Results from our TOC Journey



- **Internal Production lead-time reduction from 50 days to 17 days.**
- **High reliability** in completion date - reduction in expedite and interventions
- **Reduce Inventory** throughout the value chain by **\$US 5 Mil**
  - Constraint focus management (5 focus steps) to improve flow through the factory.
  - Buffer management to reduce dependency and variability.
- **Improve on-time delivery 92% > 98%**
  - By buffering for variability on long and unreliable raw material lead times
- **Reduction in delayed raw materials from 8% to 1.5%**
  - Using buffer management on Inbound supply chain
- **20% increase work volume** from customer
  - As a result of on time deliver
- **New product Industrialization lead time from 120 days to 80 days.**
  - Use of critical chain project management

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## Results from our TOC Journey



- **Clear strategy** and goal setting
  - Using the Logical thinking tools of Bill Dettmer
  - We constructed a goal tree that is easy to read and communicate the company goal.
  - Helping people to understand how they can contribute to achieve the goal.

- **Risk management** at departmental level (Risk of not achieving the goal)



- **Happy, cohesive and adaptable workforce** with a strong problem solving culture.
- Employees adopting "Soundest culture"

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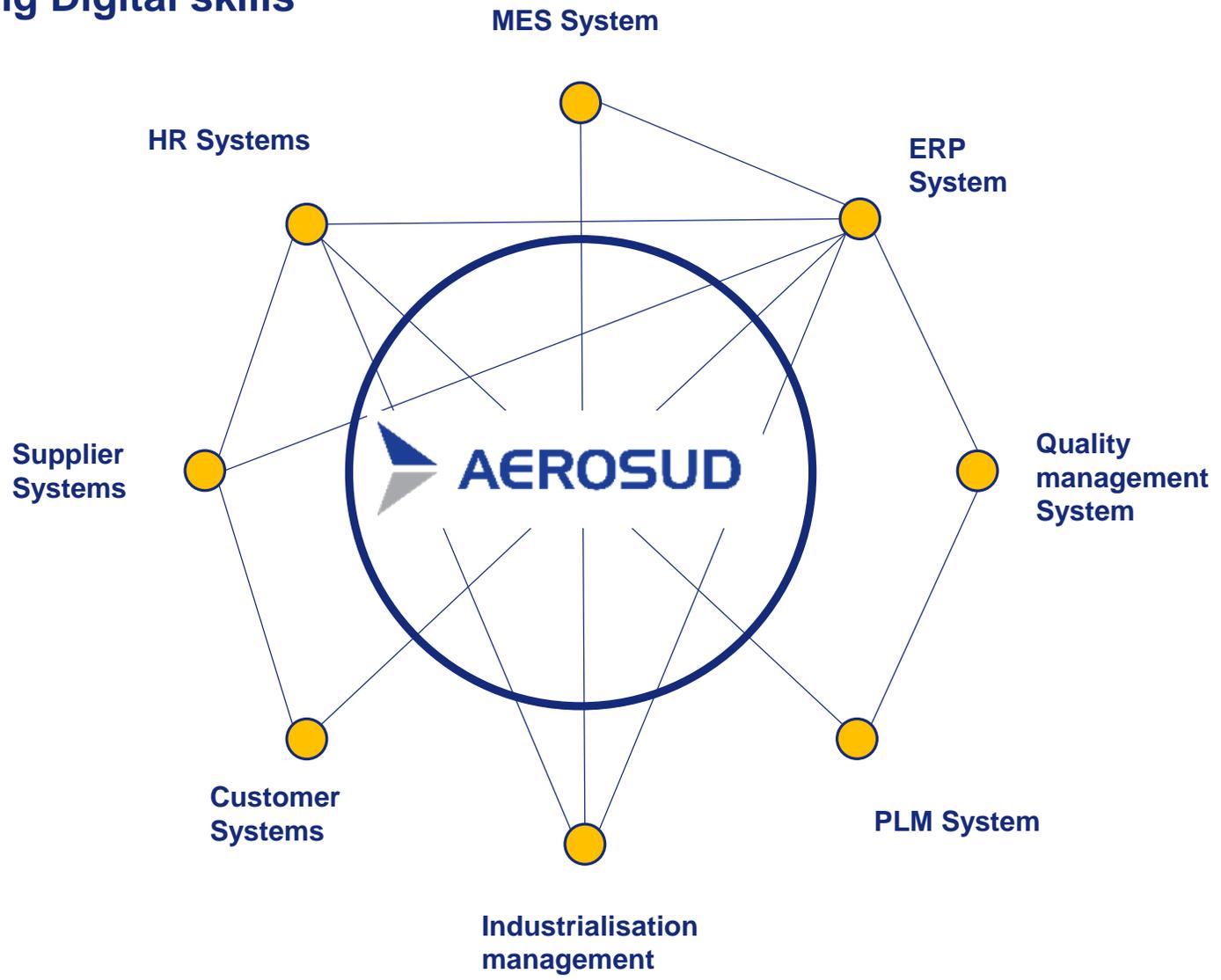
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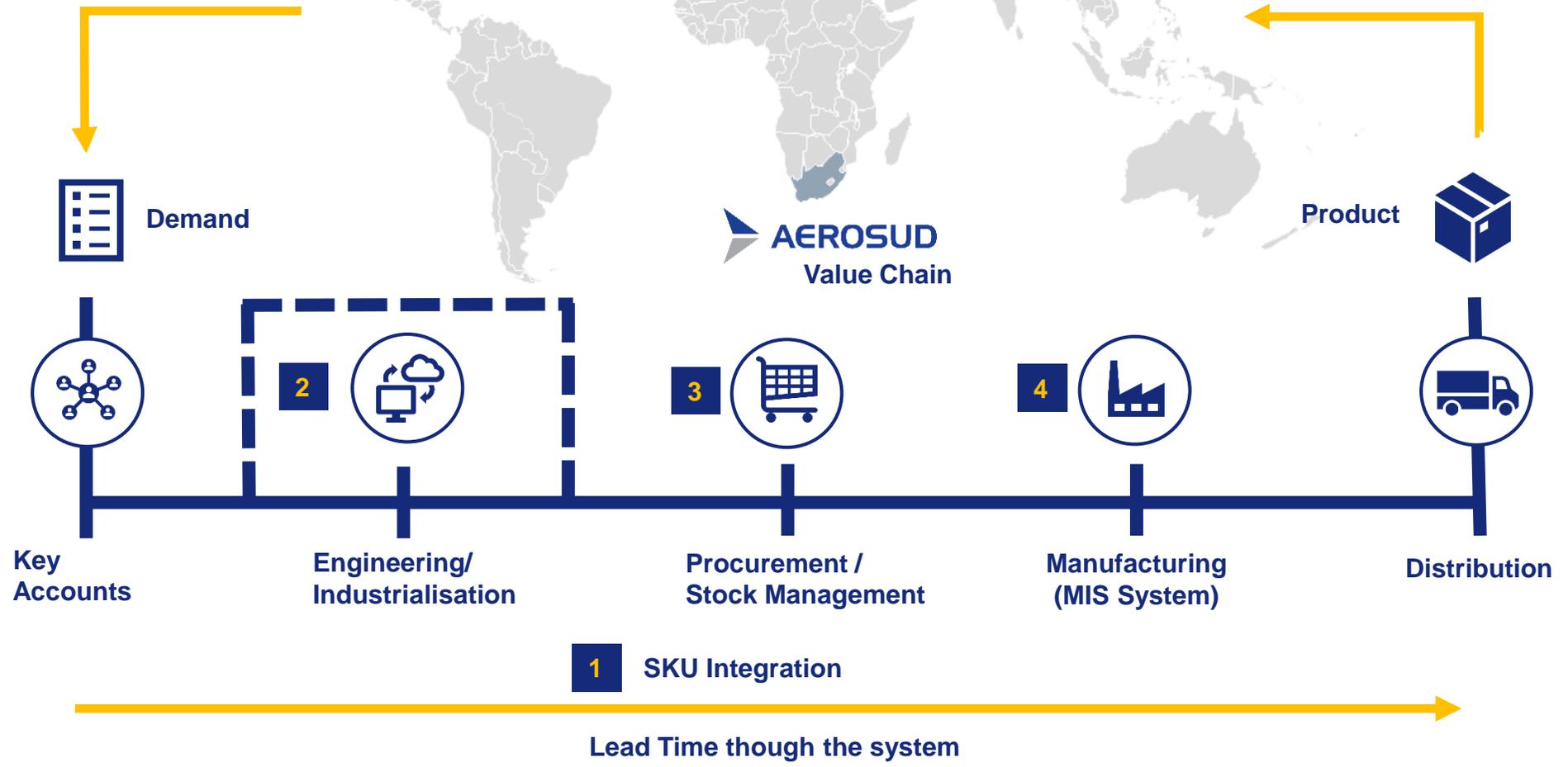
## Integrating TOC with strong Digital skills



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## Aerosud Value chain



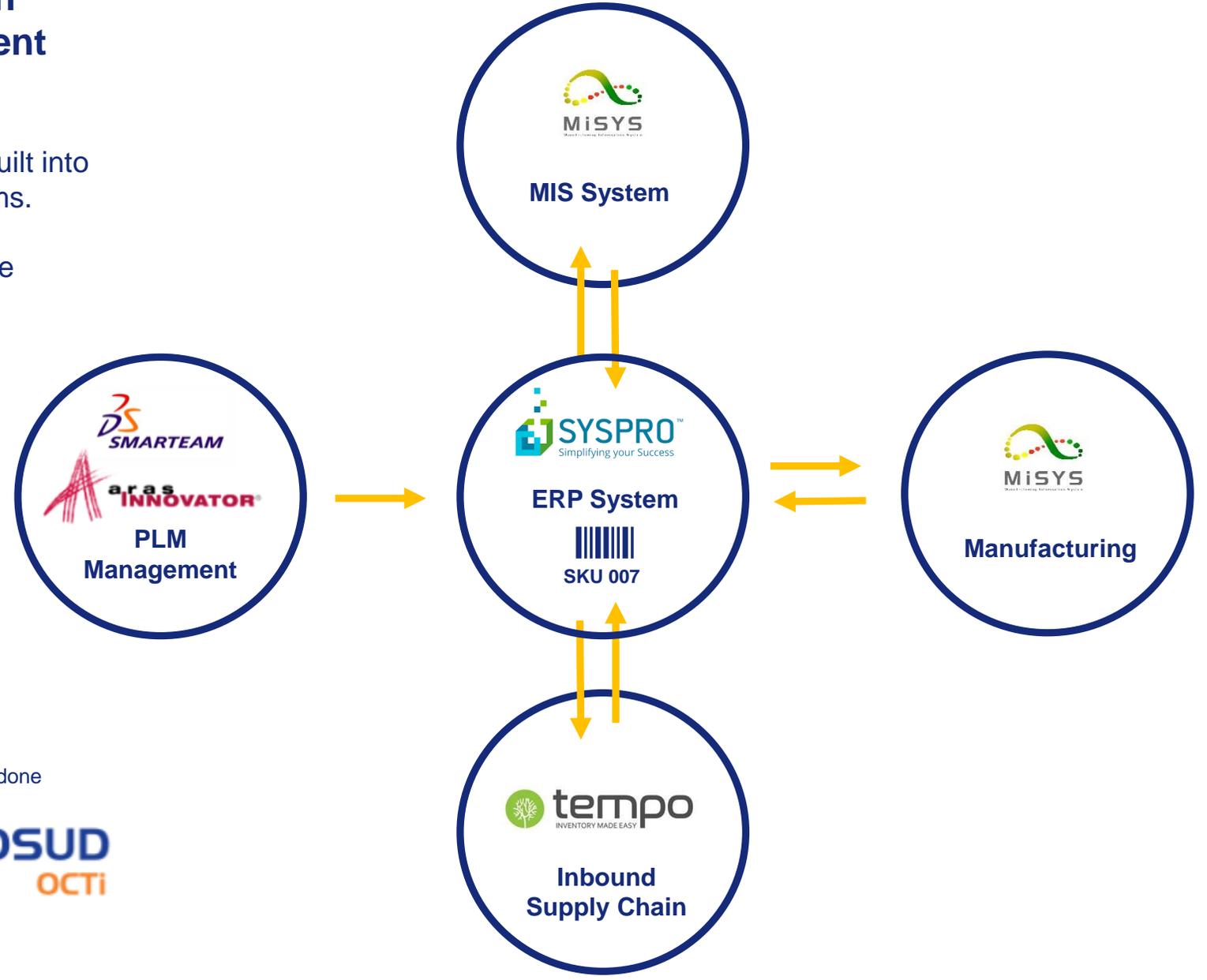
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## SKU integration And management

TOC principles are built into our integrated systems.

TOC thus became the Aerosud way of life.



Integration development done by:

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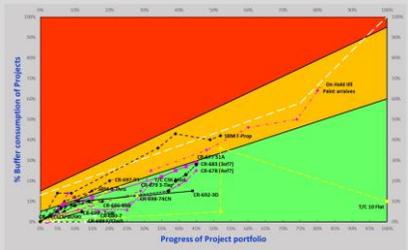
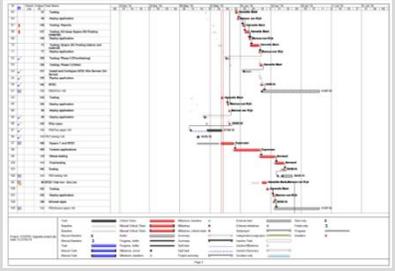
TOC, Way of life

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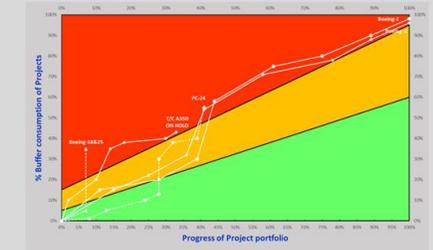
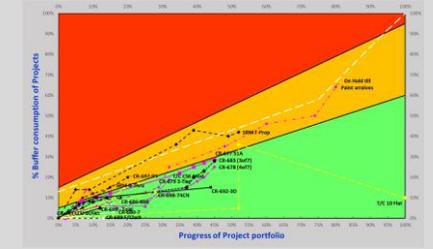
## Industrialisation and Project Management

### Planning



### Execution

### Control



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# Critical chain management.....

Easy and effective TOC management tool to reduce you project lead time 20-30%



How long will it take to complete the projects ?



4 Months  
(Local Optimisation)



On average how long will it take to complete the projects if you **only focus** on this task.

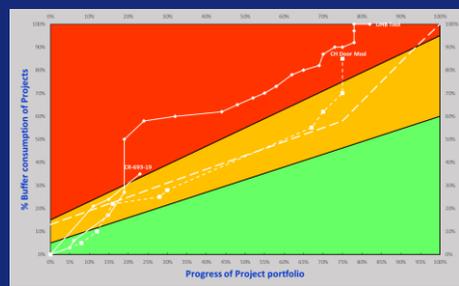


2 Months + 1/3 Buffer for safety

Determine the critical chain based on resource and Task dependencies.



Execute project and manage project though simple Time buffer management



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## Inbound Supply Chain

**Managing 3 000 bought-out SKU's**  
Move from MRP to Consumption Based Replenishment

- 300 + Suppliers over Europe and US
- 85% on Syspro Tempo (Buffer)
- 14% on VMI
- 1% on MRP
- Lead Times 30 - 220 days



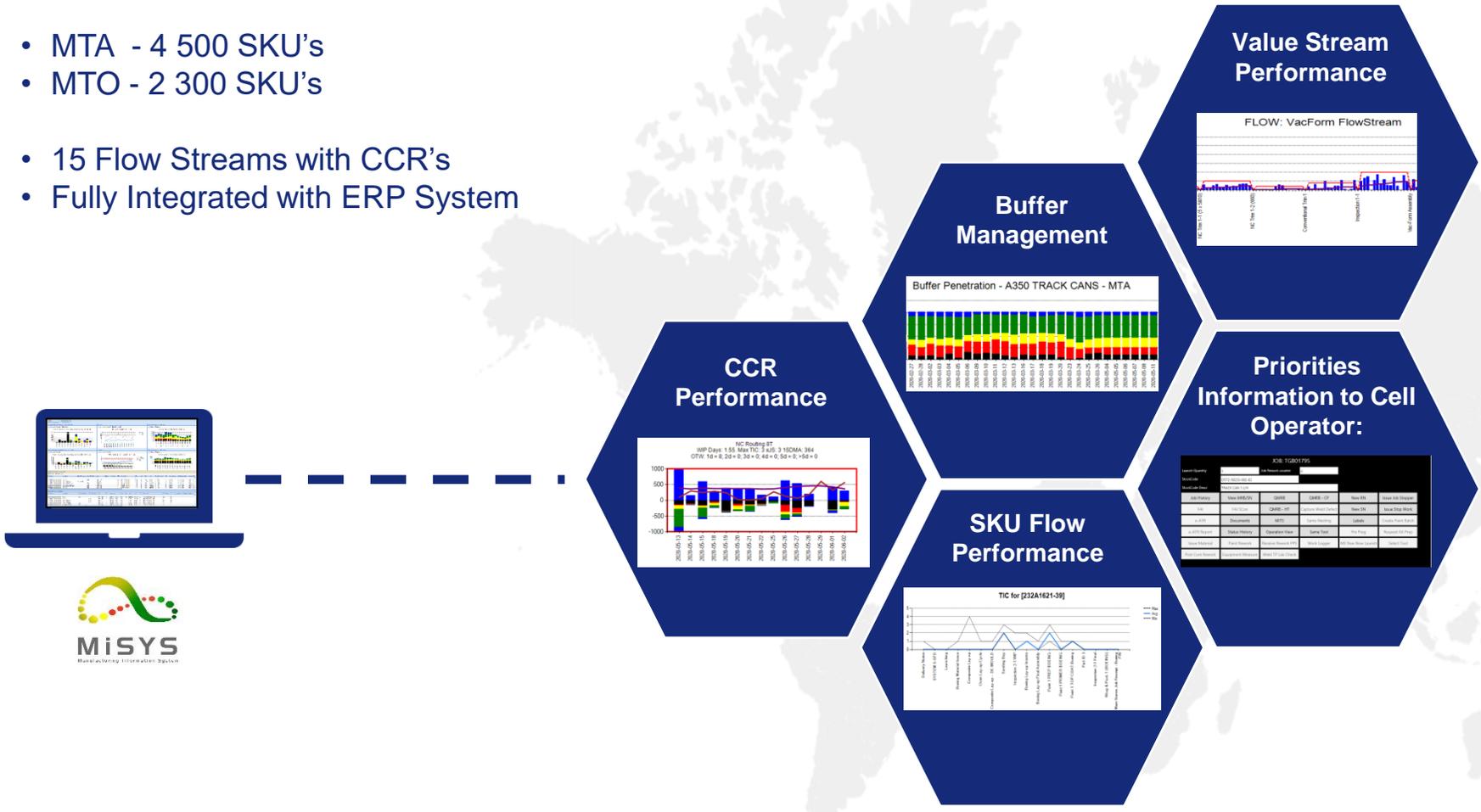
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## Management Execution System

### Managing 6 800 SKU's - "Made in's" or "WIP"

- MTA - 4 500 SKU's
- MTO - 2 300 SKU's
- 15 Flow Streams with CCR's
- Fully Integrated with ERP System



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## ...and now COVID-19 tests our TOC foundation



Presenter for this section:  
**Jeff Esterhuizen**

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New Market reality

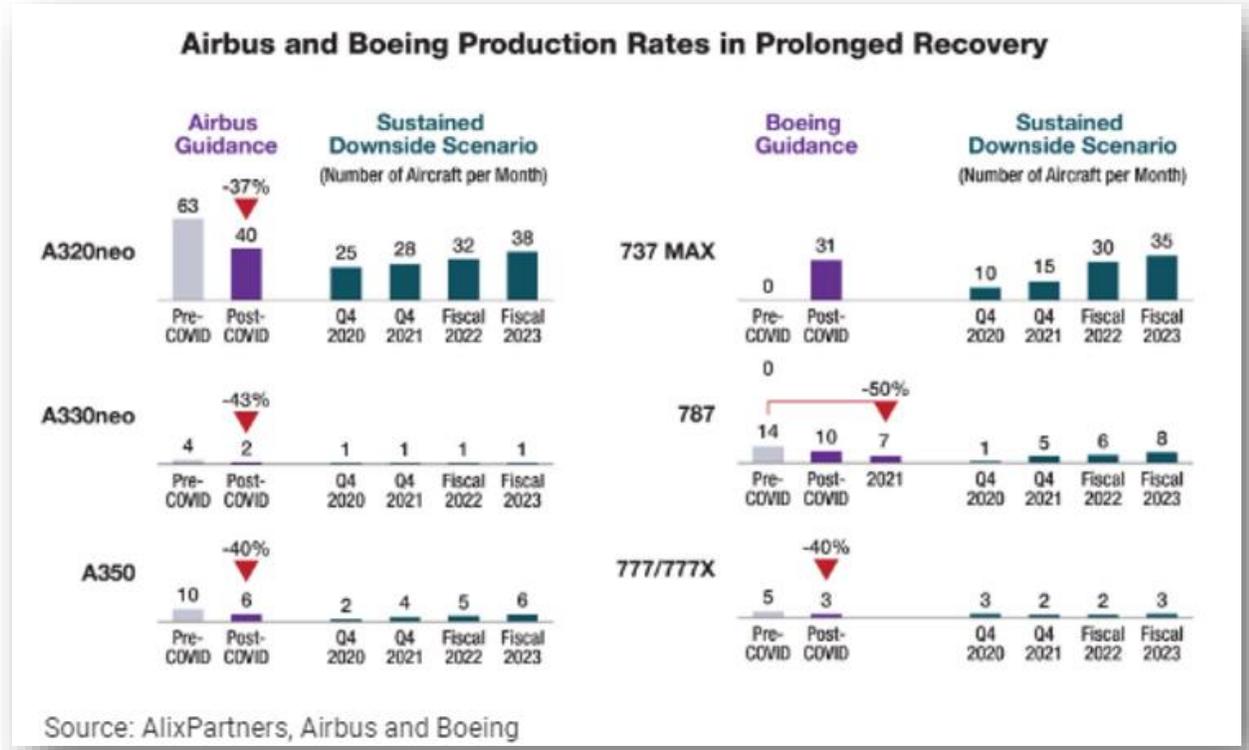
## 40% Rate Reduction

20% Supply Chain cost increase  
Made-In preferred to Bought-Out  
Global supply chain disruptions



Resulting Conflict

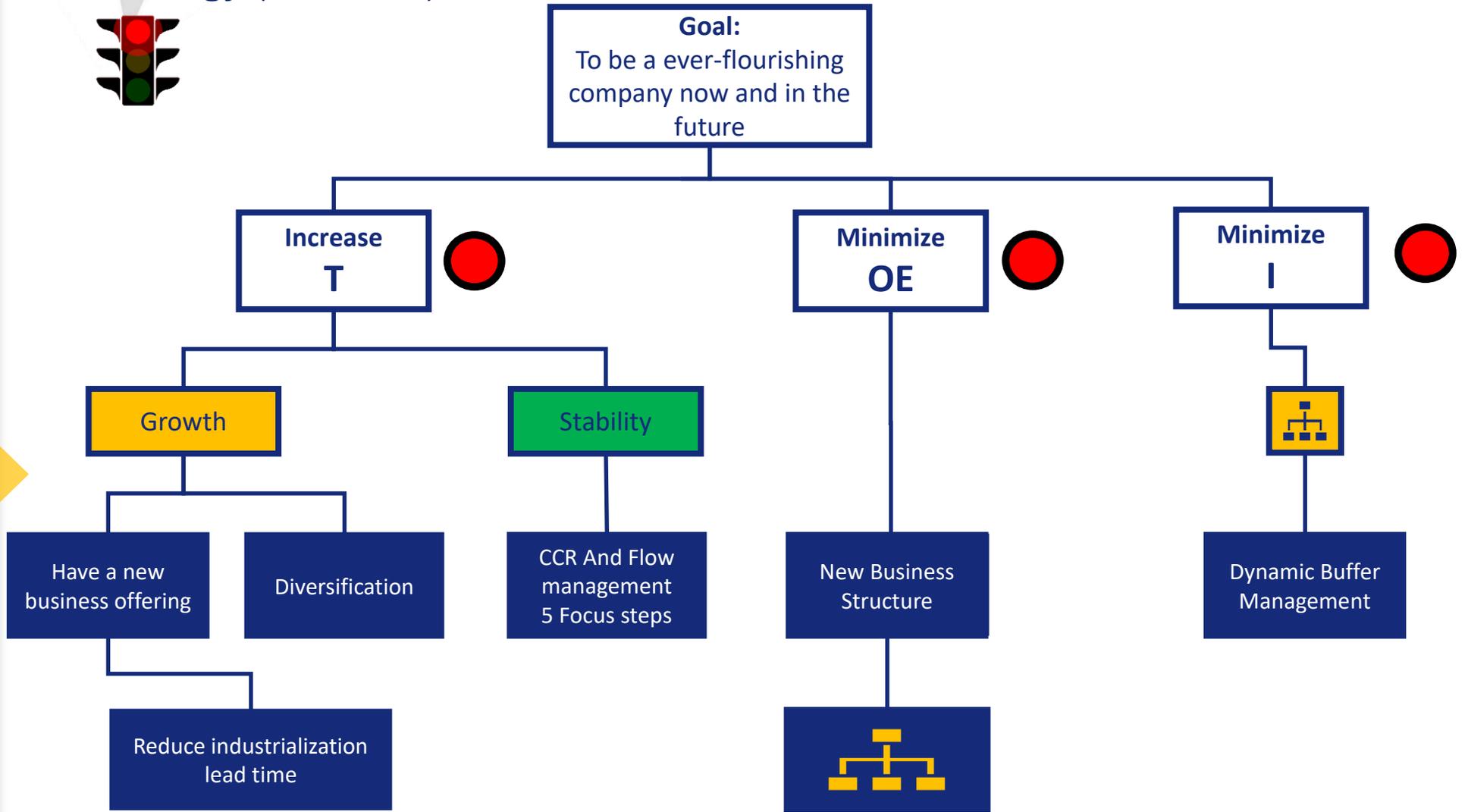
# Stability vs Growth



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## Reconsider Strategy (Late 2019)



= Nested goal trees

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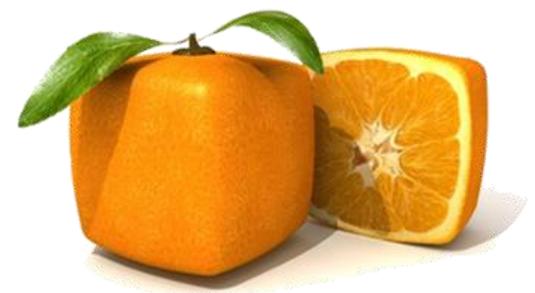
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## Have a new business offering

Digital Life Cycle and Design for Certification  
Practical experience in ToC Automation in Aerosud  
Inherent affinity for Digitalization of business processes



agile & disruptive...  
do not settle for the norm



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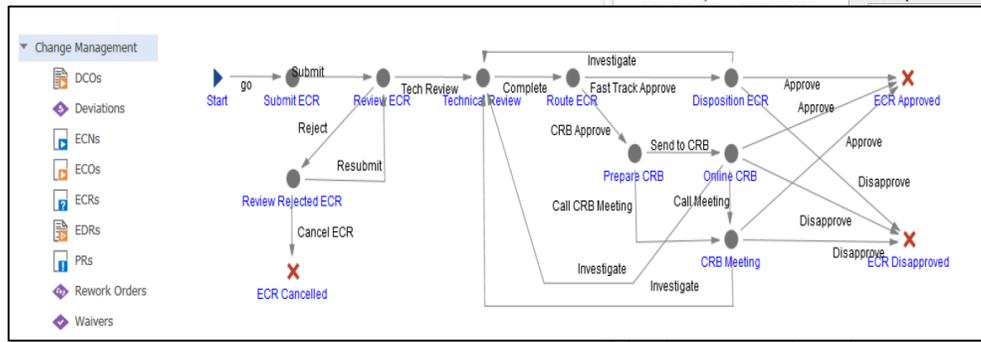
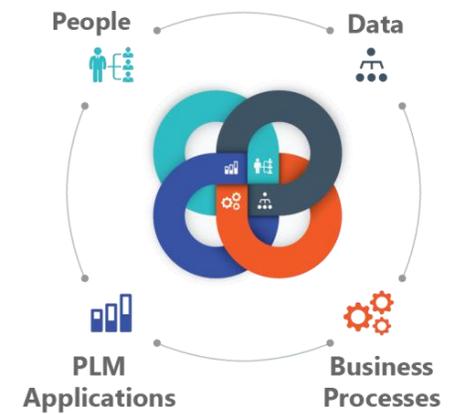
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Thank You

## Integrated Digital Platform

Creating and maintaining ONE version of the truth

Digital Life Cycle and Design for Certification



**Part**

Created By: Riaan Havenga  
Created On: 2020/05/07  
Modified By: Innovator Admin

Part Number	Revision	State
PRT-000078	A	Preliminary
OEM Number	OEM Rev	Team
10079556		Aerosud
Name		Type
10079556		Assembly
Description		

Intended Manuf process	Make / Buy
	Make
Cost	Unit

CAD Documents   Changes   Contacts   Where Used

OE...	Name	Type	State	Native File [...]	Viewable File [...]	
CAD-000107	A	10079556	1	10079556	Mechanical/Assem... Preliminary	10079556.SLDASM
CAD-000114	A	10079556	B	Conical fitting inspiratory module...	Mechanical/Drawing Preliminary	10079556.SLDDRW  10079556B00.PDI



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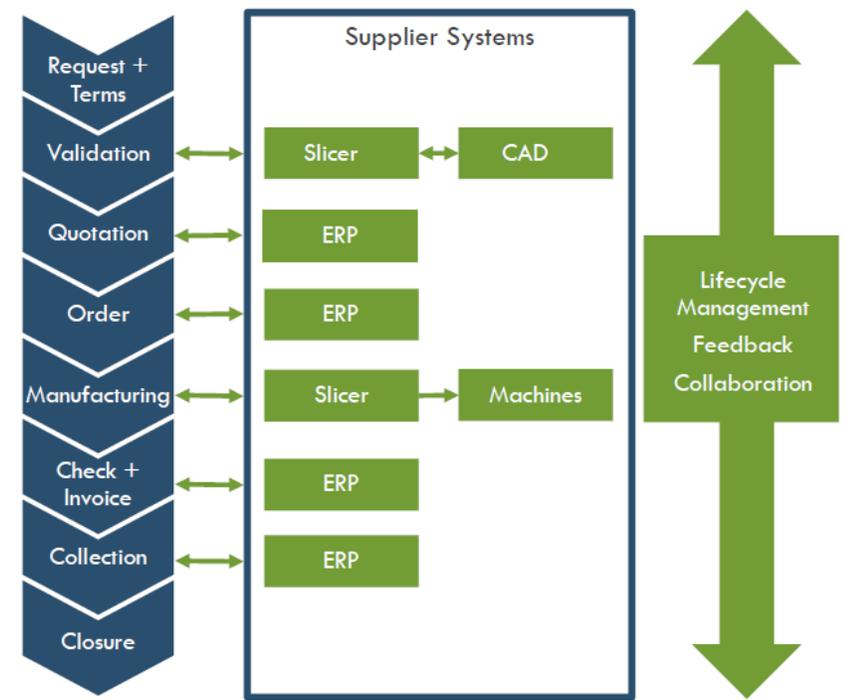
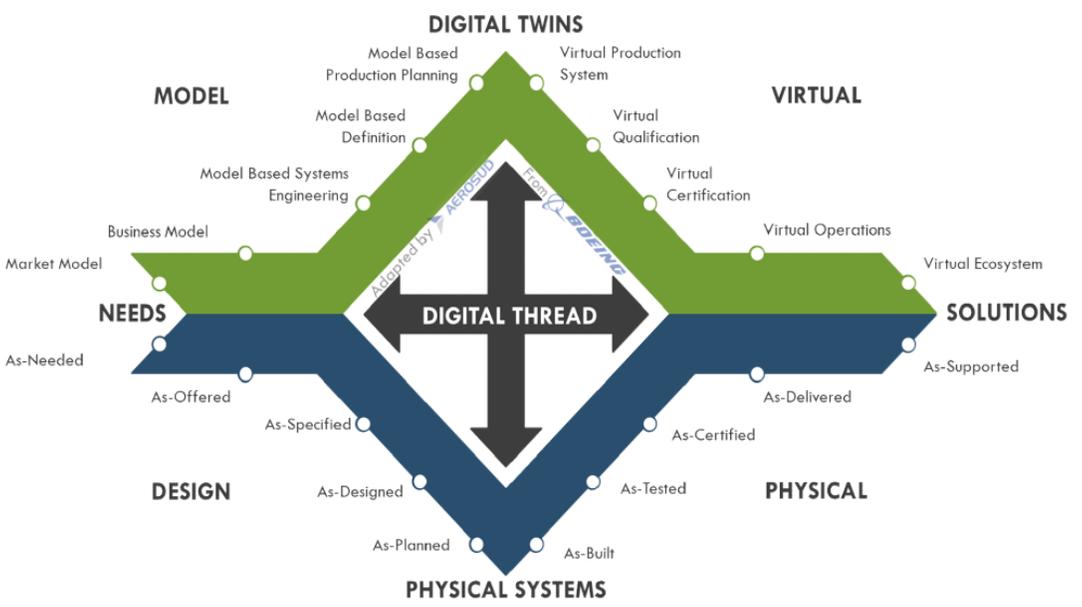
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## Collaborative Digital Manufacturing platform

Creating and maintaining ONE version of the truth

Idea was born out of Additive Manufacturing (3D-printing) skills

Connecting Customers with Suppliers in a secure workspace





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We are **building to last** on a solid foundation of ...

## Word-class Digital Platform



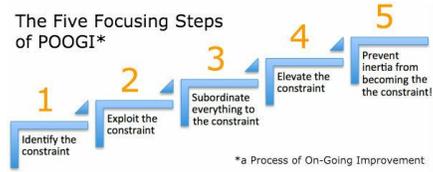
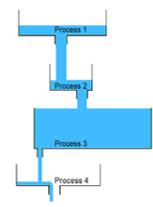
Powered by **AEROSUD**



## Critical Chain Program Management



## Entrenched TOC Principles



\*a Process of On-Going Improvement

An agreed-to goal



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**Proudly  
South African**