Evolving Through Life Service Business Models in Aerospace

inaventure

aczel&co

Strategy & Business Performance

achievingthedifference

Through Life Service (TLS) *idiom*

The combination of services required to keep an aircraft available, airworthy and economically optimal throughout the whole lifecycle.

Executive Summary

The challenge

With a goal to help ADS members advance from sale of products to sale of through-life solutions, the ADS Through Life Service Group committee wished to understand:

- If there was movement towards service-based business models
- If businesses anticipated making money from this movement
- The Value Chain associated with this movement

The solution

With the support of ADS, a team from Inaventure, Achieving the Difference and Aczel & Co. surveyed a broad range of aerospace and defence suppliers through face-to-face interviews and an online questionnaire.

The outcome

The insight enabled focus on pertinent activities. Despite movement to services driving revenue growth, few expect margin growth! The causes appear to be:

- suppliers taking on risk without sharing it with their own supply chain
- insufficient investment in Risk, Supply Chain, Contract, and Intellectual Property (IP) Management, Data Collaboration and Predictive Analytics – the Commercial Capabilities that support service propositions
- the opportunity from new and emerging technologies still not being captured by many UK aerospace businesses

So what?

The UK aerospace and defence sector needs to invest in the critical Commercial Capabilities: Risk, Supply Chain, Contract and IP Management, Data Collaboration and Predictive Analytics; to realise the sales and margin opportunity of service-based offerings, deliver on its customers' needs and retain and grow global competitiveness.

Technology adoption is a key enabler of these capabilities and delivering a service-based offer. Companies need to become better at adopting technology to retain competitive advantage and innovate service-based offers.

Background

The group's 2019 TLS summit in Shannon created the vision in Figure 1 for an optimised TLS business model, which relies upon the following themes being addressed:

- Collaborative Culture with Customers and Suppliers
    - Shared Strategy and Risk

- Capabilities and Business Models that deliver increased asset availability and payment for outcomes
    - Predictive rather than reactive
    - Connected Supply Chains
    - Revenue and Margin growth as offerings become more outcome focused

- Technology to create and capture opportunities across
    - Predictive modelling and forecasting
    - Eliminate waste and create flexibility
    - Dynamic Pricing
    - Forecast issues and maintenance schedules

Figure 1 Vision and Challenges

At this event, we introduced The Stages Model in Figure 2. This is a well-established methodology for moving from delivering individual products or services in response to orders to delivering multiple services combined to deliver an *output* e.g. maintenance including spares. Ultimately, *outcome* or *capability* defined contracts define outcomes to be delivered, such as trained personnel or a defined system performance through life.

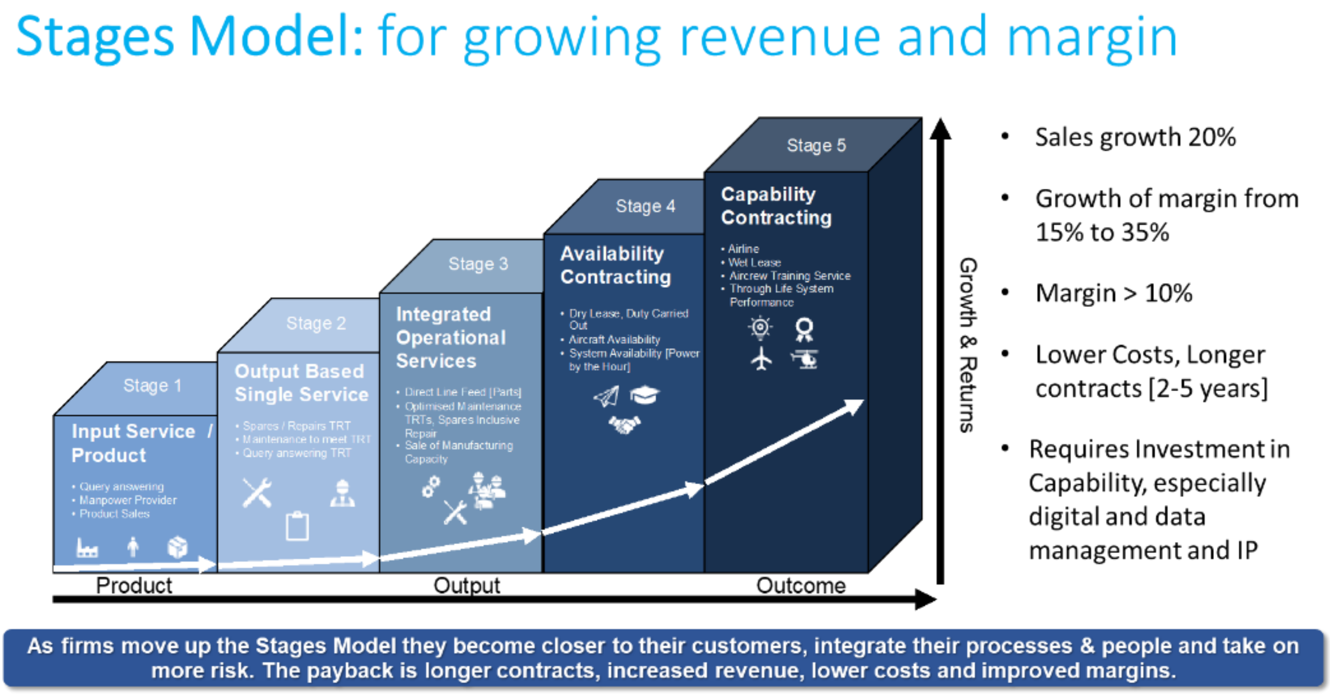


Figure 2 Stages Model

So why do this? Previous research has shown the benefits to the supplier to be:

- Differentiation in the market
- Becoming closer to their customers
- Growing revenues by taking a greater share of the customers activity
- Improving margins through longer contracts and cost reduction shared between themselves and the customer

The research suggests that as capability grows and companies move along The Stages, they enjoy higher growth and return. This has been proven in many industries and Aerospace & Defence has long had a reputation for delivering such services in examples including Rolls Royce Power by the Hour, now Total Care, and the Airtanker JV delivering UK Air to Air refuelling capability.

However, to move up The Stages and reap these benefits, companies must evolve their internal business models and invest in new capabilities. We call these ‘Commercial Capabilities’ and they are critical for protecting growth in sales and margin.

Detailed findings

Revenue and margin

Companies are ascending The Stages but slowly as it takes time to change business models and capabilities. They are seeing growth in revenue and contract length.

However, margin growth is inconsistent as:

- Capability development is not aligned with business model evolution
- 70% of revenue is still volume driven.

The waterfall chart in Figure 3 illustrates that small increases in revenue contribution are expected in all the higher steps over the next three years. This is supported by 66% of respondents seeing contracts becoming more value based. So, we are seeing movement to the higher levels of The Steps Model, but very slowly, as the movement from blue to orange shows in Stages 2-5.

Disappointingly, this in not reflected in margin expectations as our hypothesis would suggest. This was of concern, so we looked a little deeper.

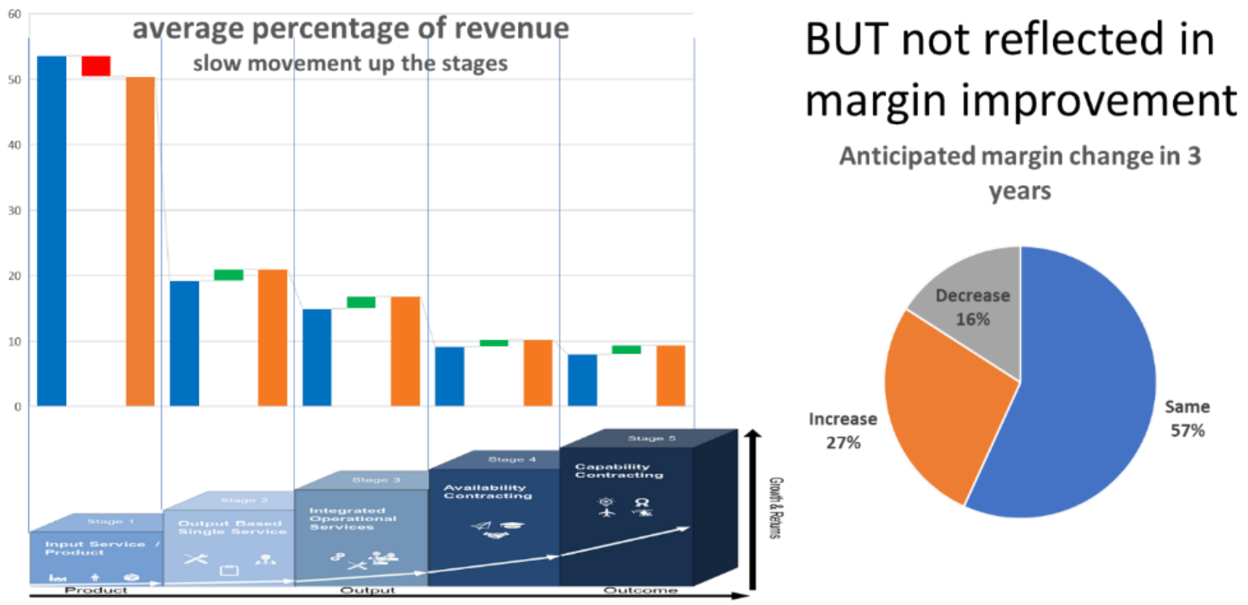


Figure 3 Revenue and margin findings

Risk in the value chain

Whilst moving up The Stages increases complexity and sharing of risk with customers, margins are thought to stay the same. This is primarily due to

- not developing the Commercial Capabilities appropriate to The Stage reached
- not valuing the service offering correctly

81% of respondents expect contracts to become more collaborative. However, Figure 4 show that risk is not flowing down the supply chain but is *bottlenecking* at the top instead.

Further, the evidence from senior executive interviews revealed that:

- Having gained experienced of more advanced offerings, airlines were shopping around and driving down price. This suggests that suppliers are not taking full advantage of the value in their proposition or have the Commercial Capabilities to articulate and defend that value in the face of a sophisticated buyer
- For more complex systems, airframers are taking an increased share, attracted by the higher margins that this offers:
    - Despite relying on them, airframers are eroding their suppliers' margin, however:
    - Suppliers with wide aircraft system breadth have more scope for direct offers to operators, circumventing the airframer

Revenue is being earned across The Stages but is primarily volume driven.

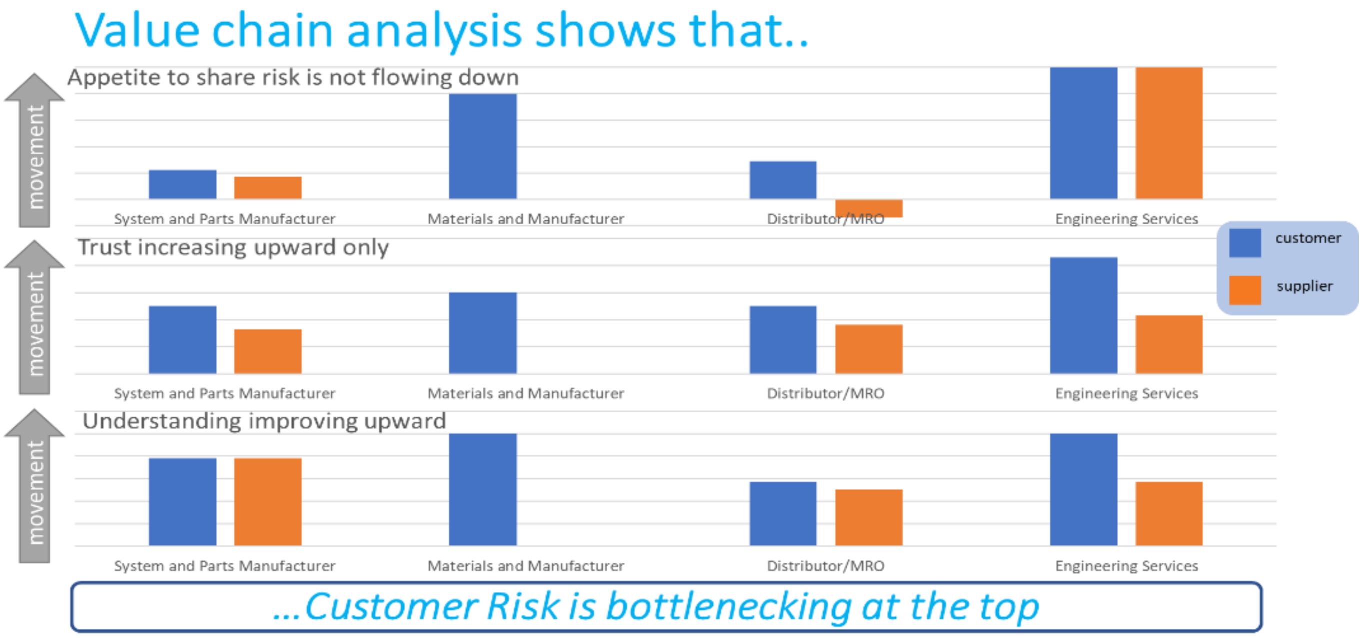


Figure 4 Risk in the value chain

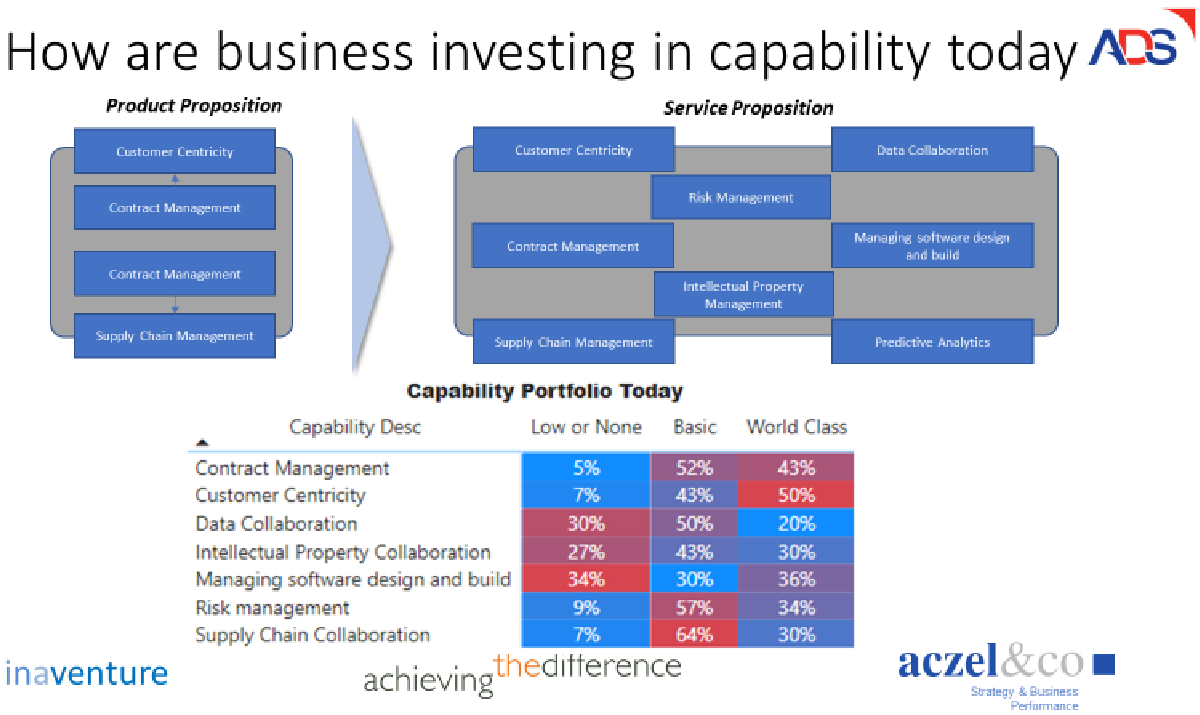
Capability investment

Though more successful companies are developing capability to manage Risk, Supply Chain, Contract, IP, Data Collaboration and Predictive Analytics, many firms are focussed on Customer Centricity as a Unique Selling Proposition (USP).

The clear paradox is that if all claim the same USP, by definition, it is not a USP! Further, this focus does not develop the supporting Commercial Capabilities that deliver and protect superior services and financial results.

We explored capabilities that become important when moving to more service focused propositions. These include understanding customer needs, better commercial relationships and an operating environment that is more collaborative and driven by data and technology.

You can see from Figure 5 that Customer Centricity is currently rated World Class by 50% of respondents, but the supporting capabilities that deliver sales and margin growth are less developed, including Data Collaboration, IP Management and managing software design and build. In addition, there are limited investments for these capabilities over the three-year period used in the survey.



Capability Desc	Low or None	Basic	World Class
Contract Management	5%	52%	43%
Customer Centricity	7%	43%	50%
Data Collaboration	30%	50%	20%
Intellectual Property Collaboration	27%	43%	30%
Managing software design and build	34%	30%	36%
Risk management	9%	57%	34%
Supply Chain Collaboration	7%	64%	30%

Figure 5 Capability investment

Figure 6 segments priority of capability development and uses Full-Time Equivalent (FTE) head count as a proxy for company size. Only about a quarter of both large and small companies prioritise these Commercial Capabilities as high. Note, from the earlier Figure 3, a quarter of companies expect margin growth, and three quarters do not!

Digging into what is needed for service-based offerings, these Commercial Capabilities are essential to grow sales and margin. Businesses recognised as successful in service are very strong in these areas and have on-going investment plans in building these in line with their commercial ambitions.

Customer Centricity is conspicuous with 50% claiming to be world class and 84% having it as high priority development area. All senior executives interviewed believed Customer Centricity to be a USP for their business, although they all operate in the same market. They defined Customer Centricity as the process of a) understanding and anticipating customer needs and b) ensuring the customer got what they wanted.

Experience in building customer centric businesses suggests that this definition overlooks delivering what the customer wants *at a price and margin that allows the supplier to grow and deliver more of what customers want.*

We suggest that the essential Commercial Capabilities, that are not customer facing, are less obvious targets for investment but they are crucial to protecting revenue and margin in service-based environments.

Giving customers what they want without developing the ability to grow and protect margins leads to lower margins in the long run.

One large company gave a positive example. It re-examined what the customer *needed* as well as wanted on a long-term service contract and how that *should* be delivered. It returned a radically different proposal recognising how it created value and could create more. It realised that data was going to become increasingly important in that proposition.

How are businesses **changing** their capabilities?

Capability Portfolio Today - less than 1000 FTE

Capability Desc	Basic, Low, None	World Class
Data Collaboration	61%	7%
Intellectual Property Collaboration	61%	7%
Risk management	57%	11%
Contract Management	50%	18%
Managing software design and build	50%	18%
Supply Chain Collaboration	48%	20%
Customer Centricity	39%	30%

Capability Priority - less than 1000 FTE

Capability Desc	Low and No	High
Intellectual Property Collaboration	41%	27%
Managing software design and build	41%	27%
Risk management	34%	34%
Data Collaboration	32%	36%
Supply Chain Collaboration	27%	41%
Contract Management	25%	43%
Customer Centricity	14%	55%

- Customer Centricity is the highest priority capability despite being the most developed across both large and small companies
- Smaller companies are to an extent playing catch up in Customer Centricity and Risk Management, when they may be better off investing on other areas to protect and grow margins

Capability Portfolio Today - more than 1000 FTE

Capability Desc	Basic, Low, None	World Class
Supply Chain Collaboration	23%	9%
Data Collaboration	18%	14%
Managing software design and build	14%	18%
Customer Centricity	11%	20%
Intellectual Property Collaboration	9%	23%
Risk management	9%	23%
Contract Management	7%	25%

Capability Priority - more than 1000

Capability Desc	Low and No	High
Risk management	16%	16%
Managing software design and build	11%	20%
Supply Chain Collaboration	11%	20%
Contract Management	9%	23%
Data Collaboration	7%	25%
Intellectual Property Collaboration	5%	27%
Customer Centricity	2%	30%

Figure 6 How are businesses changing capabilities

The new deal has been transformative for supplier and customer and allows the supplier to scale and grow margin in a way, and at a rate it had not conceived before.

A smaller company, who's challenge was how to scale, recognised that its IP resided in its people. It is converting that into a software-based proposition to commercialise that IP. Now, it can scale its IP, revenue and margin and deliver consistent sales and margin growth.

Technology – Hype vs Reality

Technology is not really understood across the sector. Technologies such as Data Collaboration and Predictive Analytics are recognised as important, but the UK is falling behind competitors in the application of technology to achieve productivity. This is especially true of small companies.

A view on capability is incomplete without a look at the technology to deliver and support it.

With massive marketing spend that makes us fear falling behind, it is tricky to separate hype from reality. As technology tends to be generic and capabilities are often specific to your circumstances, it can be hard to assess value from the investment.

We asked respondents what they thought of some leading, or well-hyped, Industry 4.0 technologies with some interesting headline findings. Here is just a few…

- Robots scored very low given the often-discussed potential
- Unsurprisingly, Predictive Analytics and Data Collaboration are deemed likely to have big impact
- Low confidence in understanding and applying technology to business operations

Given that over 80% of our respondents were Profit & Loss owners, we would have hoped for high scores in the understanding and preparing for the impact of technologies. This begs the question whether this a point of competitive disadvantage for companies and ultimately for UK PLC.

Impact of Core Technologies

Technology	Low & Unsure	Some	High
Drones	80%	18%	2%
Robots	80%	14%	7%
Blockchain	75%	23%	2%
Digital Twins	66%	9%	25%
Additive Manufacture	48%	43%	9%
Remote Asset Monitoring	41%	18%	41%
Data Collaboration	23%	23%	55%
Predictive Analytics	20%	36%	43%

Figure 7 Technology - hype versus reality

Of course, it could be that certain technologies are not relevant to their offer. In Figure 8, we take a closer look at the technology view by the product groupings.

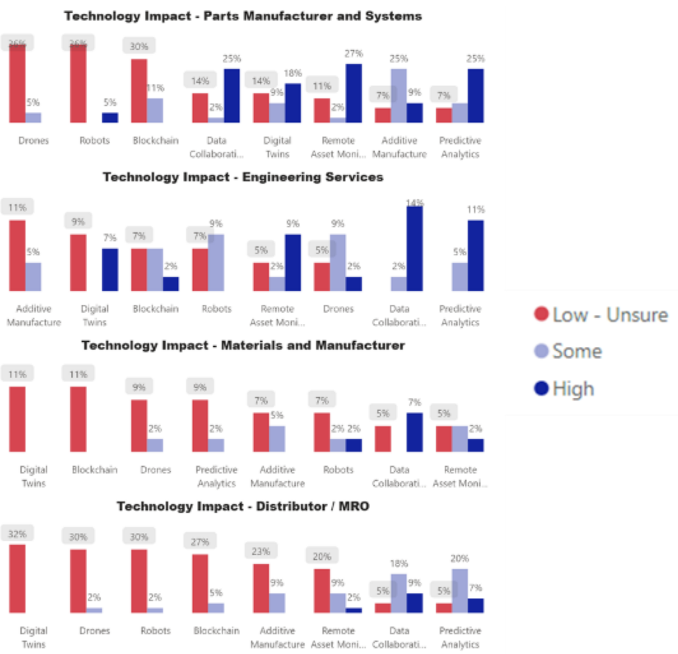
RED to BLUE shows who is and is not expecting technology to impact operations. More red than blue shows low belief in the technology impacting the grouping.

For example, Distributor/MROs see the most impactful technologies as Data Collaboration and Predictive Analytics with few believing they have they have low impact on their sales and margin.

The amount of red is worrying, showing how many companies do not believe technology will impact their business. The Made Smarter review of 2017 reviewed how technologies would impact UK productivity compared with competitors. It highlighted that: *Our competitors are using technology more widely and to greater effect than in the UK.*

Findings do appear positive for Data Collaboration and Predictive Analytics with approximately half of respondents expecting them to have a large impact.

The overall concern is the status of UK Plc. We hear a lot about the Productivity Gap compared to other countries and one of the key areas driving that is slow technology adoption. This is starkly illustrated, especially when we drill down into smaller companies.



- Data Collaboration and Predictive Analytics expected to have high impact across ~50% of respondents, which is consistent with the capability priorities
- Industrial Technology (Robots, Drones, Additive Manufacture) nearly all low / some impact
- General trend is that companies with less than 1,000 employees are expecting the least impact from technologies, however Predictive Analytics and Data Collaboration are recognised as high impact technologies here as well (25%)
- Is this a symptom of UK Productivity gap? Or a cause?

Figure 8 Technology - hype versus reality - deeper dive

Conclusions

So, does the Vision we created at Shannon last year hold true? Yes! The Stages Model further supports that view but companies must invest in the right capabilities to grow revenue and margin at each stage of the model.

Many UK aerospace companies are not investing in those Commercial Capabilities that grow revenue *and* grow margin as they move through The Stages.

The paradox is that Customer Centricity is seen by most as their USP and one of the highest priority investment areas. Investment in other critical Commercial Capabilities:

- Risk Management
- Contract Management
- Supply Chain Management
- IP Management
- Data Collaboration
- Predictive Analytics

is essential to grow revenue and margins. The study shows that these are not high priority for investment and as result fulfils the prediction of a reduction in margin.

Firms need to develop Risk and Supply Chain Management to avoid accumulating risk without reward.

They also need to develop IP Management and Data Collaboration capability to generate new revenue and margin from service-based propositions.

Data Collaboration and Predictive Analytics are deemed as important but only larger firms seem to have time and money to invest in wider industrial technologies, such as Additive Manufacture and Robots.

This is further evidence that a reluctance to implement technology contributes to the UK Productivity Gap. This study highlights that investment in Commercial Capabilities is essential for UK Aerospace PLC to realise the transformational potential of high-margin service-based propositions.

Contact

Peter Maloney
CEO, Inaventure
peter.maloney@inaventure.com

Clive Lewis
Managing Partner, Achieving the Difference LLP
clive@thedifference.co.uk

Graham Gabb
Director, Aczel & Co
graham@aczel.org