



Industry Outsourcing Aerospace in Wales

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Research Questions

- 1) *To what extent do Welsh aerospace companies source regionally and outside of Wales, respectively?*
- 2) *What is the rationale behind sourcing decisions and what role does the availability of knowledge and skills play?*
- 3) How competitive is the Welsh aerospace supply industry compared to other advanced or low-cost regions?
- 4) Could an upgrading of regionally available knowledge and skills help to improve the position of Wales?

The Welsh Aerospace Sector

- Wales is one of the four regions constituting the United Kingdom, next to England, Scotland and Northern Ireland.
- The Welsh aerospace sector, comprising of over 150 firms, displays a north-south divide.
- North Wales is dominated by an aircraft manufacture supply chain to Airbus at Broughton, one of the major Airbus production sites.
- South Wales is more loosely structured; and more involved in Maintenance, Repair and Overhaul, R&D, and training.

General Trends in Aerospace Sourcing

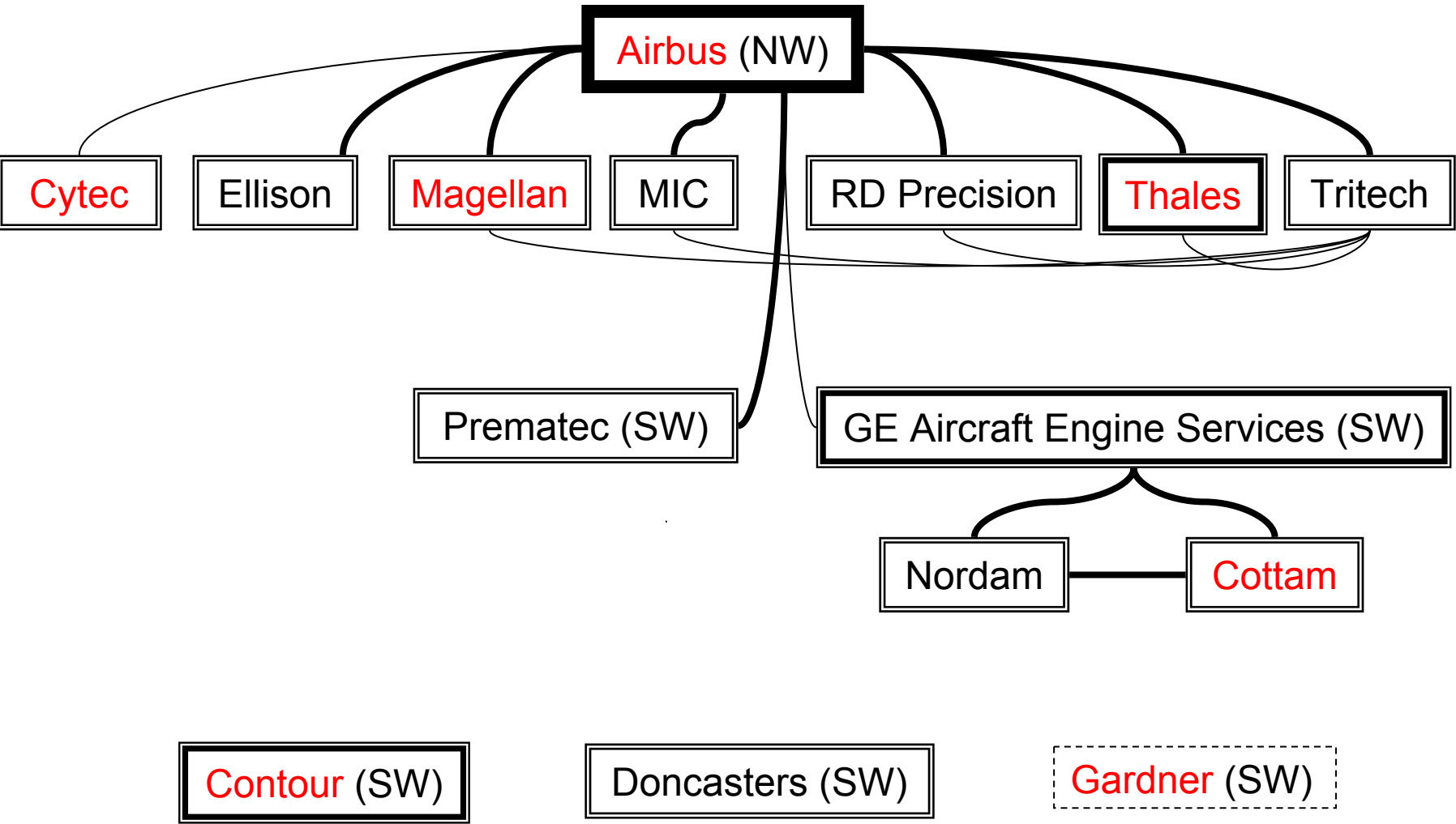
- Primes such as Airbus and Boeing agglomerate their supply chains, and want to deal just with few 1st tier suppliers.
- 1st tier suppliers must participate and share risk in aircraft R&D and deliver sub-systems.
- Primes exercise substantial pressure for cost reduction.
- Low-cost countries in Asia and Eastern Europe, e.g. China and Poland, are often regarded as a threat to more advanced regions.
- But while the UK has lost much aerospace supply work to overseas, it is the USA that have taken over most work.

Airbus UK and its Supply Chain

- Within the international Airbus SAS, subsidiary Airbus UK is in charge of aircraft wing R&D and production and operates two main sites.
- The site at Broughton in Wales produces metal wings for all current aircraft and will assemble some composite wings for future planes.
- *While the supply chains of Airbus SAS are of a global nature, British and Welsh suppliers remain important to Airbus UK.*
- *Over 50% of wing sourcing remains in the UK, and another 25% comes from EU countries.*
- *Airbus sources substantially in Wales, mainly through the North Wales supply chain introduced in the previous presentation.*

- Airbus UK has a diversified approach towards its suppliers.
- *In strategically important areas where Airbus lacks own expertise, such as composite materials, the prime develops potent suppliers and encourages them to take over greater responsibilities.*
- At the other end of the scale, however, Airbus exercises substantial cost pressure on lower-tech suppliers of, e.g., metals, and demands cost cuts in the region of 15% over 3 year contracts.

Aerospace Sector in North and South Wales: Map of Interviewed Firms



Cytec Engineered Materials

- Cytec Engineered Materials produces materials that go, e.g., into GLARE composite materials for the fuselage of the Airbus A380.
- Cytec mainly interacts with Airbus Germany rather than Airbus UK.
- *There are only a few suppliers worldwide that offer the advanced materials Cytec requires, and none is based in the UK.*
- *Two Japanese companies are Cytec's main suppliers, while Welsh firms merely supply some basic inputs.*

Thales Optics

- Thales Optics produces high-value components for different Airbus models, such as Head Up Displays for the A380.
- *When looking for suppliers, Thales Optics tries to source from sister firms of the Group Thales Optics belongs to wherever possible.*
- *Still, Thales Optics buys key inputs from highly skilled Welsh suppliers, and from England and advanced countries overseas.*
- Up to now, low cost countries remain of little importance, due to technology and knowledge issues with supplies.

Magellan Aerospace UK

- Magellan Aerospace UK produces metal wing parts for its main customer Airbus.
- Airbus supported the formation of the current company structure, amalgamating several formerly independent firms, to allow Magellan to supply the A380 parts Airbus needed.
- *Magellan buys most of its aluminium supplies in England, and sources only lower-tech inputs in Wales.*
- *The USA are also important as a supply country.*

Gardner Aerospace Wales

- Gardner Aerospace Wales manufactures metal wing components for Boeing, Airbus, and other aircraft producers.
- Gardner outsources more of its activities while seeking to limit the number of suppliers, reflecting the strategies adopted by primes.
- *Gardner sources increasingly from low cost regions, and countries where the firms Gardner sells parts to have offset obligations.*
- *Gardner has only one important Welsh supplier, since no other companies are approved by Gardner's customers.*

Cottam and Brookes Engineering

- Cottam and Brookes Engineering makes tooling for the aircraft Maintenance, Repair and Overhaul industry.
- The firm faces increasingly successful competition from producers in China, Poland and Mexico, in spite of often poor product quality.
- *Cottam and Brookes' own recipe for success is high quality, and the firm sources most of its supplies in England.*
- *The tooling manufacturer experienced quality problems when it tried to purchase supplies in Wales.*

Contour Premium Aircraft Seating

- Contour Premium Aircraft Seating specialises in the manufacture of first class, business, and premium economy aircraft seating.
- Contour has 180 suppliers worldwide, but seeks to shrink its supply base and source from 25 premium suppliers wherever possible.
- *Though most supplies come from the USA and France, low-cost countries such as South Africa are increasingly attractive in terms of price and quality, while Eastern Europe offers promise as well.*
- *Contour sources from English firms, but uses just a few Welsh suppliers, due to quality issues it sometimes experienced.*

Conclusions

It emerged that Welsh aerospace companies source both within and outside of Wales to a significant extent.

Airbus Broughton and Thales Optics stand out as the firms that buy most high-value inputs in Wales.

All other firms source few and mostly low-tech supplies in Wales.

By and large, suppliers from the rest of the UK and overseas seem to be more important than Welsh suppliers.

The availability of technological knowledge and skills seems to be key to explaining the rationale of sourcing decisions.

Airbus develops suppliers where it lacks own expertise, as exemplified by the case of Magellan. And the availability of well-developed metal skills is crucial to the success of the Broughton supply chain, as previously established.

The relevance of knowledge and skills is also apparent in many sourcing decisions of the other firms. Cytec, e.g. must use suppliers overseas, due to the lack of technologically competent Welsh firms. Thales, on the other hand, is able to source in Wales because of the presence of skilled suppliers. Most firms do not source much in Wales, due to skill and quality problems with potential suppliers. Gardner reports that it must use suppliers approved by the primes.

The Welsh aerospace supply industry shows a mixed picture in terms of competitiveness, compared to other regions.

Skilled suppliers to Airbus and Thales, and indeed all firms examined above, perform well today. But challenges of future technologies must be addressed to remain competitive.

Other parts of the actual and potential Welsh supply industry are low skilled and not fit to compete.

The fact that more highly skilled regions, such as the USA and England, often prevail over Welsh suppliers underlines the key importance of knowledge to economic success.

Competition from low-cost countries is still more a threat than a reality, but this may change with growing skills of these countries.

An upgrading of regionally available skills clearly has the potential to improve the competitive position of Wales.

Composite materials is the area where expertise needs to be developed most urgently, for composites will replace metal in wings, and Welsh strengths are mainly in metal production.