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Churchill the Agile Project Manager
The “Fighter” Supply-Chain

Part 18 in the Series

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Most people are very familiar with Winston Churchill but may not be familiar with his “agile” approach to project management and his skills as a PM in the summer of 1940. With an invasion imminent Part 17 looked at how Beaverbrook immediately impacted the Ministry of Aircraft production (MAP) by securing raw materials, labor, and building public good will. This article looks at how Beaverbrook focused on the problems of fighter production and took an unconventional approach that brought in ideas and best practices from other industries.

The target fighter production rate of 200 fighters per month ([Part 9](#)) was simply unacceptable. Therefore, Beaverbrook oversaw the following initiatives to improve the efficiency of the supply chain:

- The supply chain was revamped to improve agility and speed up delivery output. Production of fighters was limited from five to two proven types, the Hurricane and Spitfire, which were already in quantity production. Fewer aircraft types left in production eliminated some business processes. Agreement was reached that all efforts were to be concentrated on the production of just these two fighters and to have higher priority over bombers, until the end of September 1940. If it was profitable as well then labor from other aircraft factories was to be transferred. Standardization provided everything needed for Hurricane and Spitfire production so it could be immediately stepped up. Standardization safeguarded the supply of materials and equipment already allocated for these types and made it possible to divert from other types the necessary parts, stocks of materials and components, and reserves of production capacity for immediate use. Aircraft parts were sourced from hundreds of large and small suppliers to ensure availability, avoid bottlenecks, and a continuous flow.
 - A strategy that promoted production at the expense of all other activity, including spare parts production.



Figure 1: Hawker Kingston Plant (Courtesy of Crown copyright)

- The Civilian Repair Organization (CRO) was created in January 1940 to recover downed pilots and aircraft. Beaverbrook put it into operation as raw materials were scarce and expensive. This provided a chain of repair shops on RAF airfields, civil aerodromes, garages and large factory areas across the U.K. Here recovered aircraft were either immediately repaired or cannibalized for spare parts. Automotive engineers switched from automobile to aircraft manufacture, and along with bodywork repairers repaired damaged aircraft, piecing together one good aircraft from 2 or 3 write offs. Repairs were undertaken at a phenomenal rate, usually within twenty-four hours, where the pilot waited for the plane and would fly it back to base almost the same day straight into the battle. These were known as "Fly In" repairs and the "Out-patients department."
 - In such a lean operation, even enemy plane were salvaged and thrown into smelters to provide raw materials for new fighters.
- Business processes were mapped out and the infrastructure components for fighter production were connected. This better understanding of the production line process allowed it to be broken out from large scale factories to much smaller facilities like garages that could be dispersed across geographic locations creating a network of integrated manufacturing. This proved critical as all fighter production facilities were the Luftwaffe's top priority targets. In addition, new processes were introduced that eliminated the elliptical wing production problems.



Figure 2: the Spitfires Elliptical Wing was Difficult to Produce (Courtesy of Crown copyright).

- Fighter production was simplified by concentrating on completed subassemblies (fuselage frames, undercarriages, instrument panels, engines) shipped straight from suppliers, and reducing the number of small and disparate components. This reduced the complexity from business process execution.
- Expertise and best practices were brought in from the automobile manufacturing industry to speed up fighter production. Modularity was introduced where reusable parts and subassemblies could be redeployed from bomber production. These could be switched back with changing needs after the air battle. Thus the parts and subassemblies were decoupled from physical linkages to the business processes.

Today we would classify these initiatives as concepts of supply chain agility; namely standardization, simplification, modularity, and integration

In summary, nothing stood in the way of Beaverbrook's reorganization, and specifically financial considerations were not allowed to impede the program. The whole supply chain held absolute minimum inventory to maximize the number of fighters available. To secure these initiatives the functions of the Ministry of Aircraft Production expanded to embrace such diverse tasks as labor, construction, regional services, and aircraft distribution to sector airfields. This also included the defense of factories with anti-aircraft batteries. In addition, Beaverbrook was in close contact with Bentley Priory Fighter Command (Air Marshall Sir Hugh Dowding), and Storey's Gate, Churchill's Headquarters.

"The work you do this week fortifies and strengthens the front of battle next week... The production you pour out of your factories this week will be hurled into desperate struggle next week." Lord Beaverbrook, summer of 1940.

Conclusion

In today's projects, there will be some areas of the business that will need a radical approach in improving efficiencies. Beaverbrook, an outsider took a very different approach to the supply chain, and introduced the basic concepts of agility. Churchill's selection of a hard nosed leader like Beaverbrook were well justified.



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Mark Kozak-Holland's latest book in the Lessons-From-History series is titled "*Project Lessons from the Great Escape (Luft III)*" <http://www.mmpubs.com/books-LFH.html>. It draws parallels from this event in World War II to today's business challenges. His previous books include "*Churchill's Adaptive Enterprise: Lessons for Business Today*", "*Titanic Lessons for IT Projects*", and "*Avoiding Titanic Disasters: Project Lessons for IT Executives*". Mark is a Senior Business Architect with HP Services and regularly writes and speaks (presentations and workshops) on the subject of emerging technologies and lessons that can be learned from historical projects. He can be contacted via his Web site at www.lessons-from-history.com or via email to mark.kozak-holl@sympatico.ca.