

The anglo french concorde project



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1. 1) Introduction

“Faster than the speed of sound comes the plane of the future. It has cost at least fifteen times the original estimates. It is described as a “commercial disaster” by a review committee of one of the countries that built it. It is besieged by the environmentalists. The Concorde is the benighted offspring of Anglo-French diplomacy and once-and-future dreams of glory in the skies. Now its builders are trying to keep it from crashing in a sea of red ink” (Gillman 1977).

Concorde was one of the greatest man made engineering design projects of the twentieth century. It was made by the successful handshake between British Aerospace and French Aerospatiale and was therefore termed as the Anglo-French collaboration. Their engineers and designers had put lot of hard work in producing the world’s first supersonic passenger aircraft, which can fly with the speed twice as much of the sound. It was so fast that it could cover the distance between London and New York in almost 3 hours (Design Museum 2006).

In 1962, when the project began, its expected cost was between £150 and £170 million. It took nearly 20 years to put in front the first ever supersonic aircraft, which was quite efficient than the normal jet planes.

Concorde had a take-off speed of 250mph and cruising speed of 1350mph at a height up to 60, 000 feet. During its 27 years of service, it was considered as the economic pride for both the nations and also made emotional attachments with the people as it made them cherish, whenever they spotted it in the sky

(Design Museum 2006). It was a 2 billion pound project started in 1962 and was completed in 1976. There were a total of 20 Concorde constructed: 14 for commercial service development and 6 for development.

The key features about Concorde, was its Delta wings, pinpoint movable nose and sonic boom. Its wings were made by French, engines by British, the centre section by French and the middle section by the British; therefore it was a total collaboration between the 2 nations. It was an aircraft built for the people to whom Time is Money like big Celebrities. But was also protested by some people due to the amount of noise pollution it causes during its flight. In 1990 it earned a profit of almost 20 million pound a year and was considered as one of the safest aircraft and had become people's attraction (BBC-The Concorde Story 2001).

But on 25th July 2000 Concorde had its first massive crash killing about 113 people and all the 100 passengers including the crew members. Thus the aircraft lost its majesty as the people's confidence on it was shattered and were frightened to fly. Later after much of the investigations the Concorde was finally grounded in both the nations because of the safety reasons stating that there were some design flaws in its construction. Thus it was the end of the 27 years of great service that this aircraft has provided (BBC-The Concorde story 2001).

2) Stakeholder Analysis

Stakeholders are any individual, group or an organisation that has demonstrable interest in the outcome of the project. They are the people who actually participate in the project and are actually affected by its results.

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So, the most critical task of a project is to identify its stakeholders as this would help to predict the demands of the stakeholders which would help in running the project successfully.

The following analysis is done by using the STEEPLE model (Mansfield 2008).

The major stakeholders concerned with the Concorde project are as follows:

2. 1) Environmentalists: Concorde was considered as an environmental disaster as it degrades the ozone layer and thereby lets the sun's rays to enter into the environment, which ultimately cause diseases like skin Cancer etc. And the amount of noise that it produces was also intolerable for the human ears and not suitable for the people living nearby. Also, Concorde often creates a shockwave, which is actually a sonic boom and so if it passes over the populated areas, then it could also shake buildings, break glasses and can cause harm to the eardrums which often made people angry.

Therefore it was routed only over oceans (Scott 1997, Happenheimer 2008).

Their attitude was like Terrorists towards the project. (Mansfield 2008).

2. 2) British and French Government: It was recognized as a powerful symbol of ultra modern technology and was considered as a symbol of national pride to most of the people in Britain and France As before this, only USA and Russia were the superior leaders in making of the supersonic aircrafts. So, the British and French wanted to make an aircraft more powerful and faster. This made both the countries to collaborate with each other in the

interest of economy and efficiency . So, it was a clean chit given to it by the French and the British government without looking at the economical and

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environmental effects. Thus an agreement was formed between them as an Anglo-French collaboration. Also they had to overcome with the culture and language barrier, which was also a big challenge (Knowledgerush. com 2003, Design Museum 2006, Beginnings 2008).

Their attitude was like Saviour towards the project (Mansfield, 2008).

2. 3) Economists: It was considered as an “ economic white elephant” (Owen 2001: 8). It was also considered as a economic disaster as it was failed to complete within the time specified as it got passed the original estimate by millions. The air routes above the sea level also causes intolerable effects to the people living nearby, because of the amount of noise it creates. Another factor that made it uneconomic was that it required heavy fuel consumption as it was launched when the fuel crises was at its highest peak, therefore it was unable to enter into the lucrative trans-pacific market.

Thus all these factors like production delays, noise pollution, increase in price of fuel due to its shortage has made the task of selling it more difficult and due to its unaffordable cost, many airports have refused to buy a Concorde. Therefore it was difficult to operate it on an economic standpoint (BBC News 1969, Arnold 2003).

Their attitude was like Irritant towards the project. (Mansfield 2008).

2. 4) Local Population: The Concorde became the people’s attraction and was residing in almost every heart because of its beauty as well as its speed. It was a marvellous aircraft which belong less to the modern world than to the future. In its 27 years of commercial service, it became one of the best loved

engineering design projects of the 20th century. It carried out an example of technological brilliance. The people were so emotionally attached with it, that when they saw it in the sky, they used to cherish a lot by taking photographs of it. Overall it was considered as a safe plane by the people. As it was considered as a national symbol so it made them get closer and gave them an exciting sensation (Design Museum 2006).

Their attitude was like Acquaintance towards the project. (Mansfield 2008).

2. 5) Stars and Businessman: Concorde was a great boon to them as faster the speed less the time and time is money for them, and if a plane is fulfilling and actually implementing that concept so it was the only medium that they were looking for, which actually they got it in the form of Concorde, which was providing them speed, which was twice the speed of sound and also the comfort that the businessman requires (Supersonic proving, 2008, BBC-The Concorde Story 2001).

Their attitude was like Friend towards the project. (Mansfield 2008).

2. 6) Global Population: People in Antarctica and other countries were protesting against this project as the amount of noise it generates was intolerable for them and also the speed with which it goes by creating the sonic boom i. e. it pushes the air out by creating a shockwave, which can cause disturbance to the people living in populated areas. So, it was highly opposed by them.

Their attitude was like Irritant towards the project (Mansfield 2008).

2. 7) Global Government: countries like India , Russia and Africa didn't allowed this aircraft to reach there because of its certain flaws like noise pollution and depletion of ozone layer done by it, which can cause harmful affects to the human body. Their attitude caused Concorde's route to be limited to some places only.

Their attitude was like Irritant towards the project (Mansfield 2008).

2. 8) Americans and Soviet Union: They were the main rivals for the Concorde project. There were many people in United States who were willing to bubble out the Concorde's network to expand due to its noise and environmental pollution. US had a fear that if, Concorde would be able to capture the market forecast for supersonic transport, then USA would be forced to surrender world civil transport leadership and also to face payment deficits (Owen 2001: 143pg).

Their attitude was like Timebomb towards the project (Mansfield, 2008).

Based on the above analysis, I have made a mapping of the stakeholders according to their Level of Interest and Level of Power.

LEVEL OF INTEREST

LEVEL

OF

POWER

LOW

HIGH

LOW

Local public

Stars and businessman

Economists

HIGH

Global public

Global government

British and French Govt.

Environmentalist

Americans and Soviet Union

Figure: Stakeholder Mapping (Mansfield 2008).

According to the above mapping, we can summarize it in the form of

Stakeholder's Analysis:

Stakeholders Analysis

Stakeholder Groups

Interest

Power

Environmentalist

High

High

British and French Government

High

High

Economists

High

Medium

Local Public

Low

Low

Stars and businessman

High

Low

Global Public

Medium

High

Americans and Soviet Unions

High

High

Global government

Low

High

3) Financial slippage

Slippage is a minute delay in the progress of a project. If it's a single one then it can be managed but it becomes a combination of many slippages then it is often difficult to manage as it becomes overwhelming. So, it's the responsibility of all the people associated with the project to report any slippage, no matter how small it is.

There were certain reasons behind the financial slippage of the Concorde project:

3. 1) Lack of commitment to the Project: There was an overall lack of commitment in the project. The original estimate that was made was around £150 million for 4 years.

But in 1963, when first major design took place then there was first official appraisal of costs which was raised to £275 million compared with the maximum estimate of £95 million.

Then there was an additional redesign in 1965, where by 1966 the costs were given as £45 million.

As, the effort progressed, there was some problems related to the payload, which represented only 6% of the overall plane weight. As each time the design hurdle increased, the percentage was further reduced.

As the original payload was for 150 passengers but was soon reduced to 130.

But by 1968, it was observed that it was unattainable so they had to once again design the fuselage, undercarriage and wings.

In 1969, due to redesigning, the cost rose up to £730 million. And finally by 1975 the cost rose to £1096 million, with a total of around 100 seats (Gillman 1977).

3. 2) Too frequent changes: The rise in the cost of Concorde, was not because of the inaccurate estimation of the investors but it was because of increase in inflation rate which was around 37%, 31% due to the change in specifications; and nearly 20% on the new technology.

Thus, they had to pay extra cost for reserved resources and have to make modifications in it according to the situation (The Concorde Project 1974).

3. 3) Waste of time and resources: As during the making of Concorde, the time and resource management were not given more importance. Knowing that the plane having 4 engines could cause harm to the environment, they were continually investing on it.

According to Journalist Mary Goldring, “ Concorde was a waste of resources on her understanding of airlines at the time which questioned if signing up to Concorde would be financially viable”. She says that the project was “ a waste of time and a waste of resources” (Goldring 2008).

3. 4) Unrealistic targets & objectives: In 1962, when the collaboration between the two nations began, it was estimated to cost between £150 and

£170 million and for making this huge supersonic aircraft they planned just 4 years as a deadline. But actually, this project was so complex that it took much longer time and cost (Design Museum 2006).

3. 5) Inadequate Resources: There was a lack of firm orders, which made workers to believe that their jobs are at risk and enable them to turn out the available work as long as possible.

3. 6) Costs of being late

3. 6. 1) Loss of reputation: During the start of the Anglo-French collaboration, several airlines from different parts of the world, expressed their interest in ordering Concorde. But due to its periodically increasing cost and increasing price, almost all of them stepped back and by the end of its development only two airlines were left to buy planes for a mammoth cost of £23 million each. They were the two respective national carriers, British Airways and Air France (Design Museum 2006, Gillman 1977).

3. 6. 2) Extra cost for retained resources: It was developed at the time when the inflation rate was about 37% so ultimately cost of the booked resources also got higher. Thus, the project managers had to put extra cost into it (The Concorde Project 1974).

3. 6. 3) Maintaining existing equipment to extend its life: As after its development and running for several years, it had no supersonic competitors. So, there was no pressure to improve Concorde or to make investments in new sub-contractors and suppliers. As a result of that the maintenance expenditure had risen progressively, which made it impossible to take a flight because of the increasing expenses. Therefore on April 10

2003, both Air France and British Airways announced that they were withdrawing Concorde from service by the end of year. And finally on 24th October 2003, Concorde retired, being acknowledged as the fastest passenger aircraft in the world (Design Museum 2006).

4) Project Management Methodology

Every Project which is going to implement is associated with some particular types of risks. These risks cannot be overlooked but can be reduced to some extent. Thus, we can foresee and avoid these risks by doing proper doing Risk Analysis.

4. 1) Risk Analysis

“ Risk Analysis is the systematic use of the available information in determining the occurrence of specific events and characterizing the risks involved in it” (Mansfield 2008).

Risk Analysis also helps in judging the impact of those risks on the project which may bring either positive or negative effect on the execution of it

Several risks and their avoidance are given below

Risk

Description/Prevention

Probability

(1-5)

[P]

Severity

(1-5)

[S]

Score

[P×S]

Financial Risks

Description

As per the case study, the project must be completed with the total budget of £150 million. So, if the project is not completed in specified budget then it can cause the budget to go high resulting in a big loss.

Prevention

To avoid over budgeting, they must always need to have an eye on their budget.

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Political/

Legal Risks

Description

Usually due to the Government's instability there is always a risk associated with the project. As if the government changes, then it can also result in the loss of contract.

Prevention

There must be proper deed, stating the security of the order, which can be helpful in minimizing these types of risk.

4

3

12

Scope creed Risks

Description

This risk is due to poor management and unpredicted moves in the target. This can cause lack of communication between the peers and the higher management

Prevention

There must be an effective communication channel between the employees of the company.

3

3

9

Environmental Risks

Description

Natural disasters like noise pollution, earthquakes etc can sometimes obstruct the progress of the project. So, the Concorde project must take all these factors into consideration, as it can lead to loss of money, material and time.

Prevention

Before proceeding with the project, analysis about its environmental impact must be done.

3

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Technical Risks

Description

As a project involves different types of technologies, so while designing a product, technical risks must be kept in mind. As one failure can cause redesigning of the product and thereby increase in its manufacturing cost.

Prevention

To avoid any failure, each step towards the progress must be taken with proper assistance of the supervisor and higher officials.

3

4

12

Quality Risks

Description

As it was an Anglo-French collaboration, to design the world's fastest passenger Aircraft, so they need to put lots of efforts in giving out a quality product. If the quality is poor, then they have to suffer from huge losses.

Prevention

Good quality and environment feasible aircrafts should be made so as to avoid loss of reputation and also several quality checks must be planned on timely basis, so as to avoid any problem.

3

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6

Time Schedule Risk

Description

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As per the case study, the Concorde project must be completed in 4 years of time. So, if the project is not completed in specified time then it can cause various hurdles and barriers in getting the orders from different airlines and also their payments.

Prevention

To prevent this to happen, a proper schedule must be prepared, so as to avoid redundant delays. It should be created in such a way that the activities that are more complex and time consuming should be done first.

4

4

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5) Success and failure of the project

5. 1) Success

The meaning of success:

“ It is an axiomatic that the goal of project management is to be successful; otherwise the incurring of this management overhead, and the training of staff to do it is a valueless exercise.” (Knutson 2001: 356pg).

If a project doesn't meet all its objectives or achieve its certain objectives, does not mean that the project was a failure. It is also about whether “ what you are doing is infact the right thing to do” (Knutson 2001: 356pg).

Though, the project's success is not only defined in terms of acceptability of the project deliverables like scope, quality, etc., but also in terms of the internal processes like time, cost, efficiency etc. Thus, success must always be assessed in terms of its contribution to the organisation that is doing the project. It is a multidimensional construct, which means different things to different people (Knutson 2001: 356pg).

There are four dimensions of success in which the project can be related

5. 1. 1) Project efficiency: Concorde project was considered as a success because it succeeded in providing the high standards of comfort to the passengers and provided them deluxe travel experience. It was hailed for its beauty and speed and it seemed to belong more to the future than to the modern world. During its 27 years of flying, over 2.5 million passengers have enjoyed the unique experience of travelling at a speed which is twice the speed of sound. Thus, it was quite efficient in reducing the time of the flight. As it made people to fly from London to New York in less than 3 hours. Even though the project was completed well out of its estimated budget but still it was recognized as a powerful symbol of ultra modern technology and was considered as a symbol of national pride to most of the people in Britain and France. Thus, the project was efficient in proving the needs and giving a promising start to the people (Design Museum 2006, Rowell 2008, Knowledgerush. com 2003).

5. 1. 2) Impact on customer: The Concorde had a great positive impact on the customers. It became the people's attraction right from its first flight and captured itself into the people's heart. It was considered as a beautiful,
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marvellous aircraft because of its quality service and the speed with which it travels. Due to this feature, it provides hours of extra time to the passengers, for some extra amount. It was more meant for the people, who were less fare-conscious, but more time conscious and they welcome those extra hours like stars, as for them Time is Money. Thus, Concorde made a strong emotional relation with the people, which often made them cheer whenever they spotted it in the sky (Supersonic Proving 2008, Design Museum 2003).

5. 1. 3) Business and direct success: As Concorde was cherished and loved by all the people so it was regarded as a successful project. Although it was an over budget project which took large amount of money and time in its completion, yet it was successful in giving out the final model of a supersonic aircraft, which can actually fly with the speed twice as much of the sound.

On an average Concorde earned a profit of about £30-50 Million per year for British Airways from the first class passengers. British Airways reportedly received £1. 75 Billion in revenue for Concorde services against an operating cost of around £1 Billion. However, Air France made a much smaller profit with respect to that of British Airways (Concorde FAQ 2008).

5. 1. 4) Preparing the future: Concorde had no supersonic competitors, so its maintenance costs was raised steadily, which made BA and manufacturers to discuss about the maintenance programs, if they wanted the aircraft to continue the service. Finally it was decided to ground the aircraft, because of the increasing maintenance cost (Design Museum 2006).

Thus, BA's chief executive Rod Eddington said: " Concorde has served us well and we are extremely proud to have flown this marvellous and unique aircraft for the past 27 years" (Concorde grounded for good 2003).

So, even though it was retired, it was still considered as a Success.

5. 2) Failure of the project

A failure is caused if there is an inconsistency in its specification right before the beginning of the project and that inconsistency is overlooked.

It can also be caused due to unrealistic and conflicting objectives.

It is often caused due to poor planning and management, lack of understanding of contract strategy and process and underestimating costs to get the project to be approved (Mansfield 2008).

The Concorde project was a failure...

As technically the project was considered as powerful symbol of very modern technology, but it had more of the negative effects than the positive in terms of:

5. 2. 1) Environmental Feasibility: According to Environmental Scientists, the Concorde flights causes erosion to the ozone layer, which ultimately causes the incidences of skin cancer and also the noise it produces when it passes by was absolutely intolerable for human beings. Also it produces a shock wave, which tends to shake buildings, break glasses and can often cause damage to the ear drums. This made other airlines also to move backwards, in buying this disastrous aircraft, as during the beginning of this project they

showed their keen interest in ordering it. Thus, it was considered as environmental disaster (Scott 1997).

5. 2. 2) Uneconomic: As per economic point of view it was considered as an economic disaster. The project took large amount of time and cost in its completion. As it had a range of around 4, 143 miles and has a capability to carry 26, 286 gallons of fuel, which was around 5, 638 gallons of fuel during each hour of flight.

This can be calculated as 6 gallons of fuel for every mile and also 1 gallon of fuel can take 1 passenger 16. 7 miles only. So, none of the airlines wanted to by Concorde because of the shortage of fuel and rapid increase in its price (Rowell 2008, Design Museum 2006).

This was also quoted by Journalist Mary Goldring in a way that:

“ While the venture might be impressive technically, it would in fact prove to be a hugely expensive mistake. As the plane takes its final commercial flights, she says she was proved right”. (Goldring, 2008).

5. 2. 3) Cost Inefficient: There were lots of financial problems associated with this project. It was the project that was started in 1960, with cost estimation between about £150 million and £170 million. Of which, France had to complete 60% of work on airframe and 40% of the engine and remaining was to be completed by Britain. But the development was so complicated that it took far more cost and time (Design Museum, 2006).

As with the increase in inflation rate which was around 37%, 31% due to the change in specifications; and nearly 20% on the new technology, which made its estimated cost much higher, nearly double, and ultimately Britain fell into the financial crises. Then Britain's new prime minister, Harold Wilson tried to cancel the partnership but he couldn't do it as France could collect the funds from London as a charge of breaking the partnership, so fearing from that, he continued the partnership. Therefore the project cost went up year by year causing the project to be over budget (The Concorde project 1974, Happenheimer 2008).

5. 2. 4) Commercial Impact: As per commercial point of view, the Concorde project was also a failure. Various factors like: The production delays, the environmental pollution, the shortage of fuel and its rapid increase in price, had made the selling of the aircraft more complicated, which was due to the cost estimate of £20 million that made it quite expensive for the other aircrafts to buy. Thus at last only two of the airlines wished to buy the plane, were the 2 respective national carriers, British Airways and Air France. Thus, it had very limited routes to cover as it was opposed by almost all the nations (Gillman 1977).

In a statement, BA said “ Concorde would cease flying in the autumn because of “ commercial reasons, with passenger revenue falling steadily against a backdrop of rising maintenance costs for the aircraft” (Concorde grounded for good 2003).

As the price of fuel was increasing, so was maintenance cost of the aircraft. So, continuing the service with Concorde was increasingly expensive.

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From this statement: “ BA has decided that such an investment cannot be justified in the face of falling revenue caused by a global downturn in demand for all forms of premium travel in the airline industry.” (Concorde grounded for good 2003).

It is clear that, it was no longer profitable, therefore British Airways and Air France decided to retire the renowned aircraft after 27years of its service.

5. 2. 5) Lack of coordination of activities: The Concorde project also had several problems related to their jobs, resources, orders and cultures like the languages and tradition of the people from Britain and France. And it is clear from the following statements.

This statement shows that there was a risk about the future of the project in the mind of the workers.

The PM was told by the Department of Trade and Industry, “ The main reasons are all too clear. A lack of firm orders, and a consequent belief by the workers that their jobs are at risk, causes them to spin out the available work as long as possible” (BBC News 2004).

The following statement shows that there was no communication medium between the managerial hierarchies.

“ The number of people deployed on the project steadily increased to nearly 50, 000. Most of these thousands were able to get on with their work without reference to anyone except their immediate superiors. But their efforts could only be effective so long as there was coordinated direction at the top and

close liaison at all executive levels throughout the international organization” (Beginnings 2008).

These all factors made the project to lack in coordination of activities.

5. 2. 6) Successive slippages: The Concorde project was considered as the project with many continuous slippages, which made the project to go out of control, which ultimately made it to cross the barriers of its estimated time and cost. As it was scheduled to complete in 4 years of time with the budget of about £150 million but it actually took 14 years with the increased budget of £1096 million. It was all due to lack of planning as their milestone was quite blurred and were not set accurately. And also the reason behind their continuous slippage was continuous change in the design and inadequate objectives, which was the ultimate reason for its slippage (Wysocki 2007: 331pg, Mansfield 2008).

6) Conclusion

According to me the Concorde Project was a Failure

Concorde was the first supersonic aircraft to travel with the speed twice as that of the sound, which offers its passengers the ultimate travel experience. And based in this quality it became the people’s attraction and was considered as the safest and luxurious plane ever made. During its 27 years of service, it provided unique experience of travelling faster to more than 2.5 million people. Thus, it was considered as a symbol of national pride to most of the people in Britain and France. However, only fast travelling is not the only factor which declares it as a success. There are certain other factors in which this project was a complete disaster.

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First of all, the Concorde aircraft was an economic disaster as it was outdated and incredibly fuel inefficient plane. Also it was too costly for any normal airline operations to buy it. And as this aircraft was unique and had no competitors, so its cost of maintenance was rising was increasing year by year. Thus, keeping the aircraft in service would be quite expensive for the British government. Therefore they took the brave decision to finally ground this aircraft and keep it out of service.

Another factor was its hazardous impact on the Environment. While flying, it often causes erosion of the ozone layer, which gives rise to various diseases like skin cancer. And also the amount of noise that it produces was intolerable for the human ears.

Also it produces a shock wave which can cause damage to the ear drums, shake buildings and break glasses. Therefore it was not possible for it to fly over cities and towns. Th