

Project management: brief the channel tunnel

[Business](#), [Management](#)



The success of a project that initiates technological advances is ultimately measured in terms of its contribution to the quality of life, to society, the economy, or the environment. Successful projects rely greatly upon multi-dimensional or visionary individuals. In the engineering and construction business, sensitivity to quality-of life concerns is a business imperative. Sensitivity to and consideration for the community, environment, and general public begin long before the design phase and remain a priority throughout the construction phase as well as during project operation.

Brief The Channel Tunnel project had one of the largest gestation periods in history-its ideas, plans and efforts p well over two centuries. And, it may be the best example and most complex one wheretechnologyissues were integrated with those related to quality of life. Eurotunnel is a centuries-old dream come true! Engineers have dreamed of building a Channel Tunnel for at least 250 years. Between the dream and the reality lay a dramatic and unimaginably complex engineering project. Finally when this architectural wonder was complete, it was estimated that the whole project cost around 10 billion pounds, (5 billion pounds over budget and 1 year delayed)

The basis of this report is to understand areas where the project went wrong in terms of cost and time, analyze them and provide solutions as project managers to hand over such projects in time and cost with the approved and desired quality. The Need: " Linking France and England will meet one of the present-day needs of civilization." wrote French writer, Louis Figuier, in 1888. Britain and France were the world's leading maritime and commercial powers, and they were a mere 34 kilometers apart. Yet, trade between them was an extremely hazardous affair.

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The Proposal: Why not build a tunnel under the sea (the shortest route)? The tunnel project would show how the technology of this age has moved to link the Continent and Britain closer together. It would also help to revitalize the run-down economy of northwest France, which was experiencing high unemployment and was missing out on the fast growing economic prosperity enjoyed by the rest of France.

The Result: On completion the Tunnel measured thirty two miles in length, stretching from Cheriton, Kent in England to the town of Sangatte in the Nord Pas-de-Calais region of France. It is the second-longest rail tunnel in the world. It is operated by Eurotunnel PLC. The average depth is 45m underneath the seabed. It offers two principal services: a shuttle run for vehicles, and Eurostar passenger service linking London with Paris and Brussels. The American Society of Civil Engineers has declared the tunnel to be one of the seven wonders of the Modern World.

Introduction ; History The idea of a road tunnel was first introduced to Napoleon during a brief peace between France ; England in 1802. But it was soon buried with both countries waging war with each other. Many cartoons or depictions rose showing the channel being crossed by invading French troops walking under the sea in a road tunnel ; flying over in balloons. Both schemes existed only on paper. They lacked the technology to overcome the problems and did not have the necessary geological knowledge.

French engineer Thome de Gamond (1807-1876) spent most of his life attempting to find practical solutions. In 1857 his scheme was widely accepted in England ; France. The steamship ferries carried 350, 000

passengers a year 314 of them English. He estimated the appeal of a 25 minute undersea crossing with no sea-sickness would attract double the number (including more continentals). After making many hazardous solo dives 30m deep (without any diving equipment to check the sea bed and collecting samples, he proposed a rail tunnel bored through the chalk which he believed ran below the sea bed.

Recorded in history there have been three major attempts to build the tunnel. The first attempt (1870-1883) In the 1870's England & French became quite friendly after the Franco-Prussian war. Both countries agreed to work together on a joint tunnel scheme to bring them closer together. Engineers began boring trial tunnels from both sides in 1881. Both sides used improved tunnel boring machines first patented in 1875. In 1882 the English tunnel company faced political opposition. The British army was never keen on this proposal and never trusted the French. The tunnel construction was progressing smoothly when the army, alarmed by the advancements, put its foot down. The building of the tunnel was abandoned. Many solutions were put forward but it was to no avail.

After the 1st world war, many politicians were in favor of going ahead with the tunnel (it was estimated that the tunnel could have shortened the war by 2 years). The second attempt (1974-1975) In 1973, Britain finally joined France in the common market and both governments agreed to have another go at building a tunnel. But in 1975, due to lack of funds & the economic turmoil the then prime minister (Harold Wilson) had to abandon the plan. The third attempt (1986-1994) Finally in the 1980's, after further

more studies, the British ; French government gave the go ahead to a private company using private money to build the rail tunnel. The private company Eurotunnel was a bi-national company formed by Channel Tunnel Group and France Manche S. A. work started on both sides in 1987 and the fixed link was opened in 1994 nearly 2 years late and way over budget.

The Channel Tunnel offers four types of cross channel services - conventional freight and passenger trains, plus two types of road vehicle shuttles. The passenger vehicle shuttle train can go from terminal to terminal in 35 minutes. The average shuttle journey time, from arriving at one Tunnel terminal to departure from the other, is estimated to be 65 minutes. That is almost half the coast-to-coast travel time of the fastest cross-channel ferry. Better and new means of transport were needed anyway to cope with the traffic growth, due to both the increased trade between Britain and the continent and the necessity of greater convenience as well as greater speed. Commute time is cut in half and passenger and freight traffic is increasing. The depressed industrial areas around the French and British terminals are expected to benefit from the increased traffic.

The existence of the Channel Tunnel, often called the Project of the Century, is now a reality and is a tribute to the boldness and imagination of a few men of vision. Its size and technology allow to compare it to an Anglo-French equivalent of a man on the moon. The Channel Tunnel project is indeed a remarkable work showcasing the strength of science and technology. At the start of this report we mentioned that " a success of a project lies in its contribution to the quality of life, to society, the economy or the

environment". The Channel Tunnel project is one such success story in terms of its contribution. The final product has been marveled greatly but what went wrong during its implementation, or simply put, the process?

What were the reasons for Delays? First and foremost there was a 15 year decision-taking process for studies, forecasts, feasibility analysis, debate about the basic configuration of the project ; product, the false start and discussion about how it should be financed and then competition for concession. Then there is the story of the way the implementation of this unique, trans-national, infrastructure project was managed. This involved, not just managing all the engineering challenges, but also responding to the emerging safety regime and commercial requirements of the business and updating the design accordingly, while dealing with a continuous financing crisis as the costs of the project ballooned.

To build the Tunnel, Eurotunnel contracted Transmanche Link (TML) thereby generating a proper client-contractor relationship at the heart of the project. TML is an Anglo-French joint venture between Translink in Britain and GIE Transmanche Construction in France, these two groups in turn being joint ventures of the construction companies originally brought together in CTG/FM. A contract for the design, construction and commissioning of the complete tunnel system was then negotiated between the Client (Eurotunnel) and Contractor (TML).

The protocol agreement between TML and its client Eurotunnel in October 1985 was intended to be the basis for a design-and-build contract if CTG-FM's proposal for a Channel tunnel was successful. As scrutinized by an

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external consultant, the construction contract lacked sufficient incentives for TML to make " every reasonable effort" to finish on time, and failed to provide " the necessary authority for the employer to enforce timely completion."