

Last Stop, Berlin Central Station*

Reuniting Germany's New Old Capital

It was December 16, 1999 when Hartmut Mehdorn finally assumed the role of CEO at *Deutsche Bahn*, Germany's privatized railway operator. Mehdorn, who previously headed several major industrial companies in his fast-paced career, had already been proposed by the *Deutsche Bahn* management when Heinz Duerr's era as CEO ended in 1997. His management style was perceived as too radical, however, and this recommendation was refused by the German government, which, despite its status as a completely private, legal entity, maintains the power to appoint the company's leadership. Nevertheless, after two unsuccessful years with Johannes Ludewig as CEO, Mehdorn was eventually appointed as the new head of *Deutsche Bahn*.

In an enterprise that had not produced annual profits since its establishment in 1994, Mehdorn saw himself confronted with many challenges. *Deutsche Bahn* was founded in the aftermath of Germany's reunification as a merger of the two public railway organizations, the east-German *Reichsbahn* and the west-German *Bundesbahn*. Established as a private stock company in the course of the railway reform of 1994, it remained fully in the ownership of the German state. In order not to burden the newly established *Deutsche Bahn*, it was relieved from the debt its two predecessors had accumulated over time – a total amount of 34bn EUR. As a state-owned enterprise, it was expected to respond with more flexibility to the market and customer preferences, and to function more efficiently than a public agency, thereby minimizing the burden for the German state. However, the long-term goal was complete privatization through the sale of the state-owned enterprise. Mehdorn himself was a strong supporter of this vision: “The [*Deutsche*] *Bahn* always needs money. Trains, tracks and facilities need to be maintained and modernized. [*Deutsche Bahn*] must grow – just like any other enterprise. Apart from that, the state is –let me put it nicely- on the rocks. That's why we say: Hey state, sell off part of your fortune, so that we can get fresh capital from the market – for the benefit of customer and taxpayer.”¹

* Prepared by Bastian Becker (Willy Brandt School of Public Policy), Akash Deep, Ph.D. (Harvard Kennedy School), and Philipp Müller, Ph.D. (Willy Brandt School of Public Policy). Contact: bastian.becker@uni-erfurt.de. Creative Commons License, type 'Attribution, Non-commercial, Share Alike'.

¹ As cited in the Stern from July 29, 2006: Börsengang. Herr Mehdorn, warum verkaufen sie unsere Bahn?

Infrastructure as the Key to Reunite Germany and its Marked Capital

Soon after the reunification of Germany in 1990, infrastructure was identified as a key element to fully reunite the two separated regions of the country. Berlin, which was to be reestablished as the capital, constituted a special case. The city had been artificially cut into two by the Berlin wall, leaving each part with its own urban infrastructure system. According to German Basic Law, it is the state's obligation to develop and maintain the railway infrastructure. To do this, the Federal Infrastructure Plan of 1992 was implemented by the German government the following year. The plan envisaged a new railway system for Berlin, with a prominent central station on the city's *Spree* river adjacent to the administrative center and became known as the "mushroom" concept, a reference to its shape. The existent East-West connection was to be complemented by a North-South connection, realized through the construction of a tunnel which runs under the city's center. A number of seven long-distance railway stations were incorporated into the concept to allow travelers to reach all of the city's many districts easily. The central station was to replace the old *Lehrter Bahnhof* (Lehrter Station) and constituted the final part of the city's new railway system and was of high representative importance to the emerging capital, as well as to *Deutsche Bahn*. Together with the Berlin Senate, *Deutsche Bahn* initiated an architecture competition for the new central station. Following a mini-contest with only two applicants, the Hamburg-based architecture firm Gerkan, Marg & Partners, GMP, won on May 26, 1993 with a futuristic design. Along with Duerr's vision of a 'Renaissance of the railway station', Gerkan saw railway stations not solely as 'transportation spaces' but rather as 'living spaces': "The station, with its democratic open structure, its public spaces inside and out, and its corridors of movement etched upon the face of the city, represents an important civilizing element."² Construction of the station began in early 1997, with the intention to open it to the public within five years.

On July 9, 1997, site preparation was proceeding as planned, when high ground-water levels caused several leakages and major flooding of several major excavations. This unexpected incident forced not only the constructors of the station itself to review their plans, but also those working on the tunnel, connecting the new station directly to the city's southern railways. While the station's planners were hopeful to prepare the construction of the tunnel's northern entrance with a delay of no more than eight weeks, their estimate was to prove as far too optimistic. Further circumstances, such as the danger of a lowering of the foundation soil, or the prohibition to lower the groundwater level artificially, as it was likely to damage the surrounding historic sites and government buildings, required expensive building techniques.

² Edwards, B. (1997) *The Modern Station. New approaches to railway architecture*. London.

This problem was eventually solved by using an extremely expensive soil freezing technique, stabilizing the surrounding area and stopping water from pushing into the construction site. Despite the continuing construction stop, the foundation stone was laid on September 10, 1998. Germany's then-Minister of Transportation Matthias Wissmann praised the site as "Europe's largest train station project", and Berlin's sitting mayor Eberhard Dippgen was no less enthusiastic, "The new *Lehrter Bahnhof* will take up operations in May 2003. From then on Europe's north-south and east-west railway connections will cross at this place". In addition, the architectural plans needed to be reviewed as the soil conditions endangered the stability of the underground parking lot and other important parts of the new station. Each of these changes needed to be reviewed and confirmed by the Federal Railway Office, a time-consuming process. It was no earlier than August 1999, when the actual construction work was taken up again.

When Mehdorn entered office, the original timeline for the station had already been abandoned; the opening date was postponed to 2006, and cost estimates totaled 1bn EUR, 300m EUR more than originally planned. Mehdorn made the station's success his personal responsibility and promised to get the project back on track: "Immediately after my appointment as CEO, I took the station over and ordered a detailed project review!"

Mehdorn found himself steering a complex organization, one that required detailed reporting to its political owners and was structured as a holding, split up into several parts, including *DB Netz*, responsible for track maintenance and train operations, and *DB Station&Service*, operating the passenger train stations. *DB Station&Service* was also *Deutsche Bahn*'s subordinate entity which had to carry the financial burdens for renovating, maintaining and building stations including the new central station in Berlin. "The size, the complexity, can only be understood from the inside through experience and talking with people. You need time to explore and comprehend the management structure."³

Running a Train Station

In addition to financing and building it, *DB Station&Service* was to assume responsibility for the new central station and cover all maintenance and operational costs, while receiving the revenues generated. The station's total operational costs were estimated at 8.9m EUR annually, while the income from shop rentals and office rentals, combined with the fees charged for each train stop, constituted the three major sources of income. The offices, located

³ Mehdorn, H. (2007) *Diplomat wollte ich nie werden*.

in the two suspended concourses in between the station's four towers, covered a total space of 53,000 m². The shopping area within the station totaled 23,000 m². A conservative estimate, based on a rate of 20 EUR/m² per month, approximated total income from rent at 18.2m EUR annually. With 780 train stops daily, the station was expected to serve 240,000 people. At a charge of 40 EUR charge per train, 11.4m EUR in additional annual income was expected. Furthermore, the new station was to generate considerable incomes through advertisements, an amount of 250,000 EUR per month was expected and was to create another 3m EUR annually. Altogether, a positive cash flow of approximately 23.7m EUR per year was anticipated.

Public Infrastructure Investment, Benefit-Cost-Analysis and a State-Owned Enterprise

The construction of the station was preceded by a general, and formally mandated, three-step decision process. As Germany's Basic Law requires the state to maintain and develop the railway infrastructure, this process is carried out by public institutions. To begin, the Transportation Ministry compares various alternatives and develops a Federal Infrastructure Plan, which outlines recommendations for future investment. In the next step, this plan is reviewed by the parliament and usually approved. In the third and final step, the German government and *Deutsche Bahn* negotiate a financial agreement which charges the construction to the railway operator, while at the same time requiring the German state to pay for the remainder of the investment not in the commercial interest of *Deutsche Bahn*.

Germany's reunification efforts dominated the Federal Infrastructure Plan of 1992. As mandated by Federal Budget Regulations in 1969, public projects that exceed 50,000 EUR have to undergo a formal benefit-cost-analysis which takes all macroeconomic benefits and costs into account and is not limited to the microeconomic feasibility of a project itself. In line with this, the Federal Infrastructure Plan of 1992 included the following elements in the project analysis: Transport costs, infrastructure maintenance, safety, connectivity, spatial effects, environmental impact, as well as investment costs.

The "mushroom" concept was adopted as new railway system for Berlin under the highest priority. The Federal Railway Law included the plan as proposed, and was ratified on November 15, 1993. The railway concept for Berlin was comprised of different subprojects, one of which was the central station, slated to be built on the premises of the old Lehrter Station. In 1997, *Deutsche Bahn* and the German government signed a financial contract requiring the state to provide 500 of the total 700m EUR for the project. Internally, *Deutsche*

Bahn required *DB Station&Service* to build the station and to supply the remaining 200m EUR. *DB Station&Service* was obliged to produce any further financial resources as needed; at the same time additional financial support by the state was excluded by the contract.

Getting Berlin's Landmark Construction Back on Track

Beyond the water-leakage problems, Mehdorn saw the construction of the prestigious project flawed by mismanagement. His view was supported by the project review that Mehdorn had ordered and which had been conducted by a major consultancy firm. Their report highlighted bad organization and the underestimation of the risks of Berlin's sandy and watery soil, the obvious cause of the cost increases and time delays. In May 2001, he promoted Hany Azer, who was coordinating Berlin's major tunnel project and had successfully led numerous railway projects, as the new foreman of the central station. Azer was confronted with many major technical challenges. The modern design of the new station required highly-advanced building techniques, many of which had never been tested before, making efficient time and cost management extremely difficult. Architect Gerkan supports this, "The work so far shows, that this project is more complex and challenging than any other construction we undertook in the past."⁴ Notwithstanding the many improvements Azer was able to achieve, he discovered several planning mistakes made by his predecessors. In late 2001, Azer had to confront Mehdorn with additional time delays and costs; he estimated that completion would only be possible by 2008, maybe even 2009. Mehdorn was furious; he had promised to bring this prestigious project to completion as quickly as possible, and he reminded Azer that the first priority was "to take up operation before the soccer World Cup 2006"⁵. Forcing millions of soccer fans from all over the world to use a construction site as a train station would seriously harm *Deutsche Bahn's* image and probably also Mehdorn's professional career. Any further delays were completely unacceptable, and Mehdorn decided it was time for deep-cutting measures.

Options to Save Time and Reduce Costs

Mehdorn advised Azer and his team to critically examine different time and cost saving options. The first one was obvious: the planned semi-circular glass roof that covered the station had been extended during the construction process to 456 meters. Mehdorn recalls,

⁴ As cited in the *Tagesspiegel* from January 13, 2007: "Ein Dach, exakt so lang, wie einst geplant".

⁵ As stated in a letter from Hartmut Mehdorn to Klaas Hübner, member of the Budget Committee of the German Bundestag, on December 15, 2006.

“The station’s roof in its [newly] planned length was not realizable in the given time frame.” Plus, the reduction to its original length of 321 meters would allow considerable cost savings. “The costs for the short version of roof summed up to 56.5m EUR, the long roof would have cost about 74m EUR.”⁶ It was also possible to build the short version first and complete it at a later point in time after the World Cup. This would require closing down the upper section of the station for half a year with estimated construction costs of 37m EUR and another 16m EUR due to the interruption of operations. A later rebuilding of the roof would also diminish the higher noise level the shorter roof would expose the surrounding area to, where several housing units were planned. Another disadvantage of the short roof was that it was not long enough to fully cover the extended version of *Deutsche Bahn*’s flagship, the Inter City Express (ICE). In particular passengers in the first class, which wagons are usually in the front section of each train, were not protected from rain and stormy weather. Mehdorn however defended that option: “Most of the ICEs [High-speed trains] stop underground and even those wagons which stop on the upper level can still be boarded under the shelter of the roof without getting wet.”⁷ He also mentioned that the shorter the roof was, the lower maintenance costs would turn out to be.⁸

Another option, and a far more extensive change to the original design, was to not build the two suspended concourses, each connecting two of the four towers of the station. The bridges, which were to be constructed above the station’s glass roof were very expensive, and their removal from the plan produced potential cost savings estimated at approximately 135m EUR. However this would decrease the office space, which could be rented out from 53,000 m² to about 12,000 m².

Dismissal of the longer glass roof or the suspended concourses would each by itself allow for completion of the station prior to the 2006 World Cup. One further possibility, which would by itself not allow to meet the 2006 deadline but offered additional potential to cut costs, popped up when reviewing the interior planning. The original plan foresaw a vaulted ceiling for the station’s two basement levels at a total cost of 7.4m EUR. During the public bidding, the lowest offer was more than twice the planned cost: 15.9 million EUR. Further bargaining allowed for the reduction of this offer to 11.5 million EUR, a value still considered unacceptably high. Asking GMP for a cheaper alternative to the original plan, the architecture firm proposed to only keep the vaulted ceiling for the first basement ceiling and to change the

⁶ Mehdorn in front of the Budget Committee of the German Bundestag, February 1, 2007.

⁷ Mehdorn, H. (2007) Ibit.

⁸ As cited in the Tagesspiegel from February 1, 2002: Mehdorn kappt 140 Meter Glasdach.

ceiling of the second one to a conventional flat ceiling. GMP assumed that their alternative would allow the ceiling construction to stay within the budget constraints of 7.4m EUR. Mehdorn's team expressed its doubts that this was a realistic estimate and pointed out that GMP's previous proposal was an underestimate by more than 50%! Along with the public bidding for the vaulted ceiling, *Deutsche Bahn* had also asked for biddings on an alternative plan with flat ceilings on both lower levels. The lowest bid for this option was 8m EUR.

The Final Construction Phase

Weighing the different options Mehdorn and his team decided to have the shortened version of the glass roof built: "Without the shortening of the roof, the stations would not have been finalized until the world cup."⁹ This option had the advantage of requiring little legal procedures and coordination with the Federal Railway Office, which had already once approved the short version of the roof. The dismissal of the suspended concourses on the other hand would have had required substantial adaptations to the original plan. They were constructed as planned. Mehdorn was proud of his new foreman: „Since we appointed Mr. Azer, things are going smoothly." In an attempt to further cut costs, Mehdorn also ordered the flat ceiling to be constructed on both basement levels. While *Deutsche Bahn* caught up on its schedule, architect Gerkan felt being left behind, and publicly demanded from Mehdorn to stick to the original plans: "I don't know what his stupid idea was to cut the roof on the two sides, but it damages the proportions of the whole building."¹⁰

Learning that all parts for the long roof had indeed already been fabricated and were now to be stored somewhere close by also intensified public outrage. Fabrication and storage totaled a cost of roughly 8m EUR. Even the German government expressed its favor for the longer roof, while making clear that since the 1994 railway reform such decisions "are in the responsibility of the railway operator", and that it was not for politics to intervene.

Not willing to accept Mehdorn's insistence on the new plans, Gerkan's office GMP filed a lawsuit against *Deutsche Bahn*. In an unprecedented case GMP claimed that the changes to the design of the basement ceiling were so significant that they constituted a violation of the architect's intellectual property rights. GMP eventually won, and *Deutsche Bahn* was obliged to rebuild the ceiling according to the original design. Mehdorn reiterated ,"[*Deutsche Bahn*

⁹ Mehdorn, H. (2007) Ibid.

¹⁰ As cited in The New York Times from March 9, 2006: Just a Railway Hub? Or a New Sort of Compass for Europe.

will do everything] to avoid that the very beautiful, but way to expensive central station consumes any further funds, that are required urgently at other places”, “we still have more than 5,000 stations that need to be modernized”¹¹ and threatened to appeal the court’s ruling. Gerkan on the other side felt invigorated: “I will talk to my partners and lawyers about whether we will also file a suit over the shortening of the station’s roof.”¹²

After long discussions, both parties were able to settle their conflict out of court. Donating a sum of eight million Euros to GMP’s foundation “Academy of Architectural Culture”, Deutsche Bahn got the architecture firm to accept ceiling and roof as it was built now and to dismiss any future claims.

A New Station that Nobody Will Use?

In 2003, the Ministry of Transportation published a new Federal Infrastructure Plan stating that Berlin’s demand for public transportation was overestimated in 1992, as the city had been expected to grow at a much faster rate than it actually did. Infrastructure and city planners had assumed Berlin would grow within in few years to 5.7m people. From 3.5m in 1992, the number of inhabitants actually declined slightly to about 3.3m in 2001.

Even though he had resolved the problems in the timeline, Mehdorn had to worry again that the new central station still might not become the success story for which he was hoping. Therefore, it was decided that traffic needed to be concentrated at the new central station. This was to be done by closing Station Zoo and East Station to long-distance trains, thereby making the new central station the unique arriving and departure point for long-distance travelers. Mehdorn argued that the new, expensive station needed many passengers, and there ought to be enough customers for the stores which had been planned.¹³ One year before the planned opening, in May 2005, this decision was announced to the public. The Berlin Senate was outraged, and numerous action groups forms quickly winning the support of more than 100,000 Berliners. Deutsche Bahn responded instantly to the opposition they faced and reintegrated the East Station into their long-distance planning. Station Zoo, however, which had for years been Berlin’s number one station with about 150,000 travelers per day, was left out. While the closure of Station Zoo required a vast part of Berlin’s population to put up with

¹¹ As cited in Welt from May 5, 2006: Mehdorns Monument.

¹² As cited in Die Süddeutsche from December 15, 2006: Kurzes Dach und hohe Kosten.

¹³ As cited in Der Tagesspiegel from May 8, 2005: Bahnchef will Zoo vom Verkehr abkoppeln.

taking more time to reach a long-distance train, *Deutsche Bahn* highlighted that it speeded up the connections passing through Station Zoo without stopping by four minutes.

A few weeks before the official opening on May 26, 2006 everything proceeded as planned. Nonetheless, *Deutsche Bahn* still had another surprise for the citizens of Germany's capital. Despite a survey, that had been conducted by Berlin's city planners and *Deutsche Bahn* of the new station, and which stated the preference of 70% of Berliners to keep the station's name 'Lehrter Bahnhof' (Lehrter Station), Mehdorn decided to change it to 'Berlin Hauptbahnhof' (Berlin Central Station): "There's a multitude of important train stations in Berlin: Zoo Station, East Station, South Cross, Station Friedrichstraße, Spandau. People from out of town, in particular, don't know where to go. Now they know which is the central station, that is to say, the one with that name. The most important trains stop here and you can transfer to the commuter train, bus, and tram."¹⁴ Berlin's citizens were not convinced, and again tried to make *Deutsche Bahn* live up to their expectations, but Mehdorn and his team were not willing to yield. Even within the German parliament complaints were filed, but again, the government refused to take action. In an official government release it was made clear that this would oppose the original purpose of the railway privatization in 1994, which was intended to transform German railways into an entrepreneurial, not politically-laden, undertaking.

Good Things Come to Those Who Wait

Months before the opening, all stores had already been rented out, while the office space was still vacant. And then, one month before the opening of the World Cup, it was time for the new Berlin Central Station to take up operations. More than half a million visitors attended the grand opening with Chancellor Angela Merkel on May 26, 2006. Merkel expressed her appreciation for the station's symbolic character, "A transparent central station for a cosmopolitan country". One of the station's early visitors was New York Times writer Thomas Friedmann, who noted cynically, "If all Americans could compare Berlin's luxurious central train station today with the grimy, decrepit Penn Station in New York City, they would swear we were the ones who lost World War II."

The station successfully catered up to 700,000 travelers per day during the World Cup and even after the world's biggest sports event, almost 300,000 people continue to use the station every day even exceeding the original estimations of 240,000 people. This makes Berlin

¹⁴ Mehdorn, H. (2007). Ibid, p. 106.

Central Station the fourth busiest train station in Germany closely behind Munich, Frankfurt and leader Hamburg. Berlin's Station Zoo on the other side experienced a strong decline in the number of travelers from 150,000 to 100,000 daily. Thus, the access to long-distance trains improved only for about 40% of Berliners; most of the others have to tolerate longer connections. Profiting from the many users, DB Station&Service experienced revenues through advertisement of about 500,000 EUR monthly, twice as high as initially expected. However, the number of train stops did not reach the planned level, and, as for the final schedule, amounted to only 478 daily stops. The actual fee collected for each stop is 44 EUR.

The balance sheet showed that the station was completed at a total cost of 1.2bn EUR. Amongst others, the finalization of the suspended concourses had required more funds than initially planned (200m EUR). The additional 500m EUR needed to complete the station had been covered by *Deutsche Bahn* through its subsidiary *DB Station&Service*. As agreed in the financing contract, the German government limited its contributions to half a billion Euros.

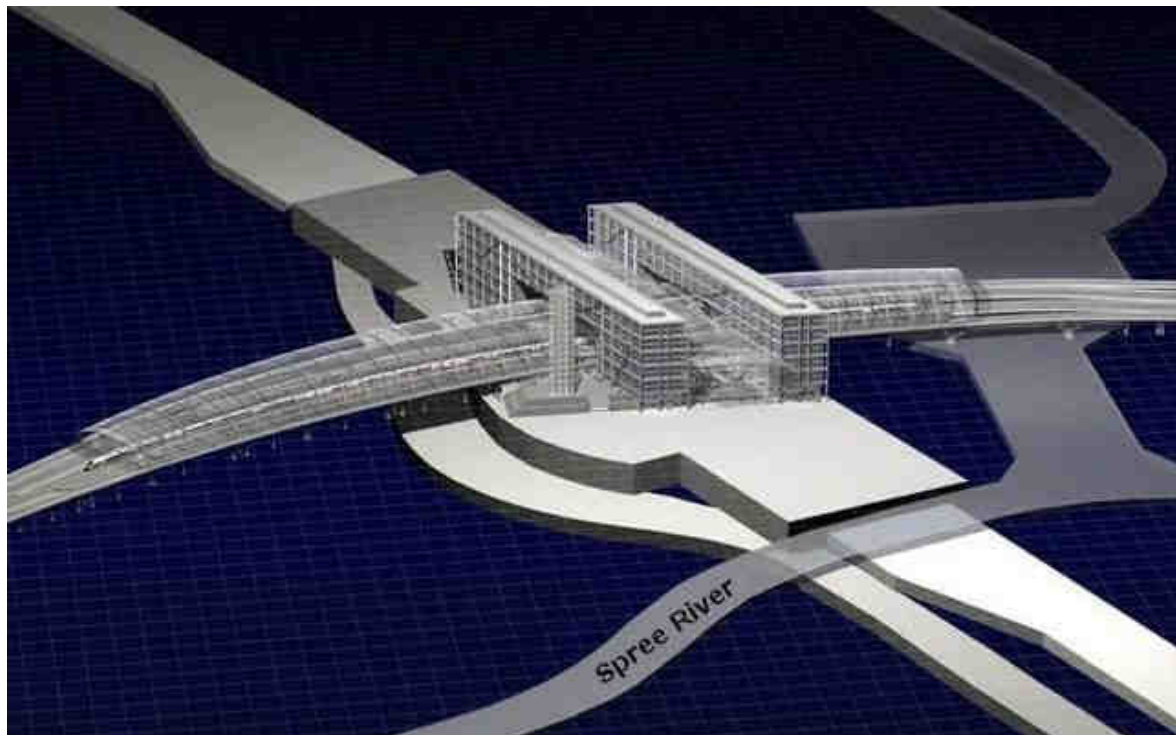
Mehdorn was full of warm words for the new „railway cathedral“: „The opening of Berlin's new Central Station attracted attention from all over the world. Never before has *Deutsche Bahn* experienced such an image boost. For us, the new Central Station is the heart of the Bahn, right in the center of the capital.”¹⁵ However, he also stated that “under the same conditions he would not build the Berlin Central Station again”.

¹⁵ Deutsche Bahn (2006). Halbjahresbilanz.

APPENDIX



"Mushroom" concept as included in Federal Infrastructure Plan 1992



Architectural plan of the Berlin central station

