The Ideology Behind a Business Activity: The Case of the Nuremburg-Fürth Railway

David J. S. King[1]
Johns Hopkins University

A few years ago, Germany celebrated 150 years of German railways on the anniversary of the opening of the Nuremberg-Fürth Railway on December 7, 1835; similar anniversaries had been celebrated in 1885 and 1935 [2, 6, 8, 11]. Historians have not challenged the Nuremberg-Fürth Railway's claim to be "Germany's first railway with steam power." In making this claim, however, the directors of the railway, like later historians, passed over several coal railways constructed during the 1820s, as well as Franz Anton von Gerstner's Budweis-Linz Railway, which was under construction in Austria. The former were not "public," and the latter, at least at first, did not use steam locomotives--therefore neither qualified as "railways."

Perhaps it is unimportant which railway is called the "first." Still, given what railways later became in Germany, the Nuremberg-Fürth Railway seems at first glance an unlikely candidate. The railway was never extended beyond the six-kilometer route between Nuremberg and Fürth, and the Bavarian and later German railway network was built around it without forming any connection. When the railway company was closed in 1922, its right-of-way was used first by a street car company, and a subway now runs along the same route.

Why is the Nuremberg-Fürth Railway, which has more in common with later mass transit systems than with the larger German railway network, still seen as the first German railway? And what does this problem suggest for the study of business history?

Business historians generally pass over as self-evident the problem of what a railway actually is, or address it in terms of the external characteristics observable in existing railways. Thus the Nuremberg-Fürth Railway was a railway because it had two tracks and used a steam locomotive. Besides, the problem of whether or not the Nuremberg-Fürth Railway was or was not a railway becomes statistically insignificant when its six kilometers are measured against the 14,806 kilometers of railway that existed in Germany thirty years later.

---

[1]This paper illustrates the application of a four-stage model of business innovation developed more fully in my dissertation, "Public Opinion and the Introduction of the Railway into Germany (1759-1860)."

BUSINESS AND ECONOMIC HISTORY, Second Series, Volume Twenty, 1991.
 ISSN 0849-6825.

For the entrepreneurs who built the first railways, however, the definition of a railway was by no means a simple question. They discussed railways publicly in the context of broader social, economic, and political change, and the shape their projects ultimately took reflected compromises made with numerous other groups, among them, most notably, the government. Before the first railways could be built, these public debates delineated a complex definition of the railway in laws, statutes, and public expectations, which were in turn incorporated into the material and organizational structures of the railway industry and of the private companies themselves. These structures constrained individual managers, who were expected to maximize specified kinds of return according to established rules.

The sophistication of the technical skills that managers have developed to control their business activities and the importance of profit to the viability of individual companies should not blind us to the fact that railways were designed as a tool to build a certain kind of society. The important social, political, and economic revolutions that railways helped bring about in German society during the nineteenth century were not the accidental by-products of an extraordinarily successful technical innovation, but were instead the very goals for which entrepreneurs developed railways and which countless later managers have successfully, if not always consciously, striven to achieve.

The Experimental Stage

In Germany engineers first experimented with railways as one of many new kinds of road surface designed to reduce friction. They expected the government to construct railways, like other roads, to consolidate and represent sovereign authority throughout its territory. Of the different alternatives examined, however, canals and not railways were considered most effective, although contemporaries believed that the cost of a canal outweighed its benefits on most routes.

Joseph von Baader, one of the most insistent early railway advocates in Bavaria, first proposed a railway between Nuremberg and Fürth in 1814. This route seemed ideal for a demonstration of the potential of the new kind of road. The terrain was flat (rails, while reducing friction, do nothing to overcome gravity on hills), and sufficient traffic already existed between the two cities to justify the expense. More importantly, Nuremberg and Fürth had been absorbed into Bavaria only eight years earlier in 1806; Bavaria itself had become a kingdom in the same year in the reorganization of Germany under Napoleon. The Prussian government, which had ruled this region (Franconia) before 1806, had built a highway between the two cities in 1804. A railway would provide an excellent opportunity for the Bavarian king to show his royal authority through a concern for the well-being of his new subjects and an interest in commerce.

During the 1820s, a group of merchants in Nuremberg and Fürth became interested in a railway. Like the engineers, these merchants assumed the government would build the railway like any other road and looked on it not as a private financial speculation but as a project to be undertaken for the

common good. As representatives of the merchant estate (*Handelstand*) within the traditional social hierarchy, they petitioned the government to carry out the project. Even those entrepreneurs who offered actually to undertake the project in this period saw themselves as contractors working for the government and expected the government to specify the route and to bear the risk of the undertaking. Both the Bavarian administration and parliament discussed the Nuremberg-Fürth Railway on several occasions during the 1820s, and, in 1826, the government assigned an engineer to survey the route.

In most German states, the project of replacing the existing road network with some kind of railway was shelved primarily for financial reasons. In Bavaria the government's interest in the Nuremberg-Fürth Railway in particular diminished when a rival transportation project in the same region appeared to provide a more spectacular symbol of Bavaria's national greatness and interest in commerce. The rivers Main--which flows into the Rhine and the North Sea--and Danube--which flows into the Black Sea--come within sixty miles of each other in Franconia near Nuremberg. Charlemagne had attempted to build a canal to link the two rivers in the ninth century, and the symbolism of joining the Rhine and the Danube, thereby uniting all of Europe in its center, Bavaria, had attracted several rulers before King Ludwig [9, 18, 27].

Advocates attempted to associate many of the goals put forward to justify the canal with their railway project. They depicted the Nuremberg-Fürth Railway as the first link in a line joining northern Europe to the East, which, like the canal, would redirect European trade along the path through Bavaria and restore Nuremberg to its medieval glory [18]. King Ludwig, however, preferred to build a canal--seen as a magnificent project--rather than a railway, which was still seen as a mechanical toy.

From 1835 to 1846 a government-sponsored joint-stock company built the canal using a series of 113 locks to scale the mountains that separated the two rivers at a cost of almost 17.5 million Gulden [15]. King Ludwig depicted himself as accomplishing the task that Charlemagne had abandoned, thereby using the canal to demonstrate the importance of the Bavarian monarchy, both geographically and historically [20].

As had been predicted, the shortage of water at high altitudes to feed the numerous locks, coupled with the time it took to pass through them, made the canal even less attractive to merchants than the existing road. The Rhine-Danube Canal, though a spectacular princely undertaking, was a commercial failure. Even today the compelling symbolism of joining the Rhine and Danube rivers has not died. A new canal--the Europa Kanal--is currently under construction to link the same rivers [15, pp. 31- 32].

The Idealist Stage

The government's insistence on building the Rhine-Danube Canal (which many contemporaries realized would not be commercially feasible) instead of a railway (which advocates thought would better serve the commercial needs of a reviving German economy) confirmed many Liberals

in their view that the interests of the government were fundamentally different from those of economic reform.

The Napoleonic wars had devastated the German states and had left them in need of profound social, political, and economic reform in the early nineteenth century. The ideas of Adam Smith had become familiar to bourgeois entrepreneurs and members of the bureaucracy alike. Liberal thinkers inside and outside government called for national economic programs that took no account of the traditional social hierarchies and economic structures that still dominated German society. They understood that improved transportation, like railways, would break down the closed local market structures on which guilds depended and would make possible competition and improved division of labor, thereby opening Germany to national and international markets.

Throughout Germany, territorial governments realized that they could not finance railway construction without raising significant new revenues, which they could not do without granting political concessions. When the established governments showed themselves to be more interested in shoring up their sovereign authority than in the reform program, Liberals argued that a truly prosperous Germany could only arise when they took economic decisions into their own hands. They saw evidence in the success of the Liverpool-Manchester Railway in England in 1830 that railways could pay for themselves [1]. Railway advocates in Nuremberg began to make a virtue of the fact that the Bavarian government was looking to the merchant estate to build the railway. They described railways as one of the new machines that did the work of hundreds of thousands of horses and millions of human hands. As members of the bourgeoisie controlled these machines, they were becoming even stronger than the traditional aristocracy [1, p. 3].

In the 1830s the advocates of railways built by private companies depicted themselves not as members of a traditional estate within an established social and political hierarchy, but as citizens (*Staatsbürger*) who saw the government as its servant. They were aware that if they undertook the traditionally sovereign project of road-building, they could claim sovereignty on a broader stage.

The culmination of these abstract discussions in the case of the Nuremberg-Fürth Railway was reached on January 1, 1833, when Nuremberg publisher E. F. Leuchs distributed a pamphlet calling for a railway company [14]. Leuchs, however, was a publicist, and, his pamphlet was only a political statement, not a formal prospectus for a business project.

The Legislative Stage

A different kind of entrepreneur translated the abstract goals of the Liberal advocates into concrete business activity. The leaders of the Nuremberg-Fürth committee, most notably Johannes Scharrer and Georg Platner, were involved in numerous other "public-spirited" (*gemeinnützige*) projects, like the formation of a savings bank, a polytechnical school, and a gas works--areas, like transportation, that would traditionally have been seen as the preserve of the state. They participated in local and state government

(when this became possible under the Bavarian constitution of 1818) and in diplomatic negotiations of importance to economic (as opposed to dynastic) interests. Scharrer, for example, participated in negotiations for the customs union (*Zollverein*) that culminated in the same year in which the Nuremberg-Fürth Railway committee officially called for subscriptions for the railway. Railways became a symbol of what bourgeois participation in public life could accomplish [18].

The Nuremberg-Fürth Railway was the first public German "road" built by an association of private investors espousing Liberal ideals instead of the state. What set it apart from earlier government road and canal projects, however, was not its design to generate private profit. Where government road projects had hitherto been seen as a means to increase the centralized political and economic authority of the government over its territory, the new railway was seen as part of a major transportation system designed to reshape German social and economic relations according to the Liberal model.

For this purpose it was not even essential that the railway company be private. The Nuremberg-Fürth committee actively sought Bavarian government participation in the project and, in 1834, applied for and received the right to name the railway the "*Ludwigs-Eisenbahn*" after the king. Despite this, the government subscribed only two shares in the company and did not even pay for these without delays [15].

Although the original capital of 132,000 Thaler (final cost 176,000) was a sizable sum, there were individual capitalists involved with the railway who could have built it either alone or with a private group of associates without resorting to public subscription. Nevertheless, the committee deliberately solicited subscriptions from all over Germany to ensure that all Germans would see that bourgeois associations could build a railway if necessary without government assistance [21, p. 62]. It was to be a German railway, and the locomotive was named *Der Adler*--the "eagle"--a name appropriate both to the speed and power of the new machine and to its role as a symbol of pan-German nationalism.

The railway project had not previously been understood primarily in terms of its profitability, and the committee promoted it as a patriotic undertaking. Still, they realized that if they expected private individuals to risk their own capital, they would have to show how the railway could pay for itself. They published studies of the existing traffic between the two cities and estimated that the railway would yield dividends of 12 1/2%.

They drafted statutes based on the public's expectations of the railway, but, to form a company with a consistent structure, choices had to be made among conflicting ideals. For example, the committee chose Stephenson's model of a steam railway as established by the Liverpool-Manchester Railway over competing models. Several members of the committee, including, M.L. Wellmer, the lawyer who drew up the statutes, wanted the railway to take a form more compatible with the existing government highway system as a tram-way (with flat rails that could be used by ordinary wagons) built along the existing road [30, 31]. This kind of railway resembled ordinary roads, as it was open to all, with mechanisms to allow vehicles to pass freely from rail to road at any point; steam railways, on the other hand, required a monopoly,

an independent right-of-way, specialized railway vehicles, and track that led without interruption from station to station, enabling the company to control the use of the line.[2]

The company had to adopt a legal structure that could be recognized by existing law. The Nuremberg-Fürth Railway was one of the first joint-stock companies in Bavaria and specific legislation was lacking to regulate railways. The Bavarian government granted the company a concession based on older laws designed for other purposes but was unwilling to commit itself hastily to the formulation of new laws.

Thus, the railway company was not granted the right to expropriate the land it needed. Advocates had said much about the patriotic importance of the railway, but they did not expect individual landowners to sacrifice their private interests for the general good of society without the guarantee that other landowners would have to do as much--indeed, one of the members of the railway committee became notorious for the price he demanded for his land. Railway advocates expected the patriotic altruism they called for to be instituted in laws, which, if rarely invoked, provided the railway company with the means to keep prices within reason.

The government also refused to grant the company an exemption from indirect taxes or any guarantee that the railway could be extended beyond the original six-kilometer route, although the company assumed--incorrectly, as it turned out--that it would be able to acquire further concessions later. The Nuremberg committee was eager to build the railway despite these unfavorable terms--in part to be the first to complete a railway in Germany and also to foster the development of such a significant cause throughout Germany.

In 1836, a year after the Nuremberg-Fürth Railway was opened to the public, Bavaria passed laws to regulate the terms on which railways could be approved; in 1837 a new law gave the government the power to allow railway companies to expropriate land [15]. Similar laws passed throughout the German states formed the legal foundation on which the German railway system was built.

Although legislators made use of its experience, the new laws did not apply to the Nuremberg-Fürth Railway. In Bavaria only one of the five private companies formed under the new laws--the Munich-Augsburg Railway--actually finished its railway before the Bavarian government deflected the Liberal challenge by adopting its program and establishing the government-administered Bavarian State Railway along similar lines in 1843.

---

[2]Ludolf Camphausen described stations as an evil result of the monopoly of control over the railway. "The more traffic a privileged company has, the greater the apparatus it requires and the more wagon sheds, warehouses, workshops and other buildings it requires due to the concentration of the traffic; these installations are connected to the road itself and surround it on all sides like a fortification to defend the end point of the railway against the public. When normal roads reach the city, they stop being a single line and throw off branches in all directions and allow an uninterrupted journey to all parts of the city" [7, p. 25].

The Conservative Stage

The entrepreneurs who designed the Nuremberg-Fürth Railway Company intended that it should expand and at the very least be linked to a great railway network. But the Bavarian State Railway built its line from Nuremberg via Fürth to Bamberg without any connection to the Nuremberg-Fürth Railway, effectively isolating the short railway from the rest of the network. Cut off from the broader context in which they had hoped to operate, the directors of the Nuremberg-Fürth Railway were forced to reassess their position. The traffic between Nuremberg and Fürth was sufficient to make the business of linking the two cities profitable. Since the railway was profitable and did not compete with the state railway for traffic, the government chose not to nationalize it as it did the Munich-Augsburg Railway in 1844 [15].

Despite its limited scope, the directors continued to promote the Nuremberg-Fürth Railway as the first railway of the great new era. Yet the line had little in common with the companies that made up the great German railway network. It did not, for example, carry freight. The two kegs of beer transported on the railway's opening run--which have gone down in legend as the first "freight" to be carried by a public German steam railway--were carried on a passenger seat and had been issued with passenger tickets. Similarly, the railway's steam locomotive and English driver became famous throughout Germany, although the railway limited the use of steam traction to one daily train in each direction. Platner himself admitted that steam locomotives could not reach their maximum speed on the short railway and that the locomotive had to begin slowing down well before the end of the railway to avoid coming off the end of the track, as once happened [22, p. 16].

Conclusion

The actual business and economic significance of the six kilometers of isolated track between Nuremberg and Fürth had little in common with the thousands of kilometers of railway that bound Germany together socially, economically, and finally politically during the nineteenth century. Yet the efforts of the promoters of the Nuremberg-Fürth Railway had not been in vain. The Bavarian State Railway, while by-passing their railway, adopted a structure that resembled the Nuremberg-Fürth Railway more than it resembled earlier public highways, and the government railway system ultimately achieved most of the goals put forward by the bourgeois Liberals. The Nuremberg and Fürth entrepreneurs failed to play a direct role in realizing their broader goals, not because their ideas were unrealistic or bad business, but because they did not wait for their ideas to be incorporated into a broader consensus.

Committees all over Germany recognized in the Nuremberg-Fürth Railway the same ideals that underlay their own railway projects and were encouraged by its financial success. It is perhaps a quibble to point out that the specific business the railway company finally engaged in was different, for it was this shared ideology and program which made the Nuremberg-Fürth

Railway the first German railway. If the line between Nuremberg and Fürth did not accomplish its broader objectives, the railways following in its footsteps did.

In the nineteenth century, railways both helped bring about and represented important developments in German society. Although it is important to see how the inanimate imperatives of the new technology influenced the development of German society, it is important for business historians to examine how individuals who introduced business innovations shaped technology to achieve complex and far-reaching goals, that transcended the specific imperatives of the administration of their own business. Some early railway advocates dissociated themselves from projects when they realized the changes their colleagues intended to promote with the new technology. But most railway advocates envisaged changes very similar to the ones that were effected. The breakdown of traditional societ'y was not a surprising side-effect of a technology intended for other purposes. Arguably that was its primary goal.

References

1. Anonymous, *Das größte Wunderwerk unserer Zeit oder die Eisenbahn für Dampfwagen zwischen Liverpool und Manchester in England* (Nuremberg, 1832).
2. Autorenkollektiv, *Deutsche Eisenbahnen, 1835-1985* (East Berlin, 1986).
3. Joseph von Baader, *Ankündigung einer neuen, überall anwendbaren Erfindung von eisernen Kunststraßen zur Erleichterung des Transports aller Waaren und Produkte* (Munich, 1814).
4. _____, *Neues System der fortschaffenden Mechanik* (Munich, 1822).
5. _____, *Über die Verbindung der Donau mit dem Rhein und die zweckmäßigste Aufführung derselben* (Sulzbach, 1822).
6. Max Bekh, *Deutschlands erste Eisenbahn Nürnberg-Fürth* (Nuremberg, 1935).
7. Ludolf Camphausen, *Versuch eines Beitrages zur Eisenbahn-Gesetzgebung* (Cologne, 1838).
8. (Deutsche Bundesbahn), *Zug der Zeit--Zeit der Züge. Deutsche Eisenbahn 1835-1985* (Nuremberg, 1985).
9. Friedrich Fick, *Der Kanal in Franken* (Erlangen, 1805).
10. F. J. Gruber, *Nürnberg und Fürth in industrioser, commerzieller und geselliger Verbindung bei der erfreulichen Gelegenheit* (Nuremberg, 1835).
11. Hagen, *Die erste deutsche Eisenbahn mit Dampfbetrieb zwischen Nürnberg und Fürth* (Nuremberg, 1885).
12. Hanns Hofman, "Deutschlands erste Eisenbahn als Beispiel unternehmerischer Plannung," *Raumordnung im 19. Jahrhundert* (Hanover, 1967).
13. Heinrich Leonhardy, *Die Anfänge des Eisenbahnwesens in Bayern* (Nuremberg, 1911).
14. Erhard Friedrich Leuchs, *Sammlung der von 1776-1836 in Betreff der Eisenbahnen und Schienenwege in Amerika, England, Frankreich und Deutschland gemachten Verbesserungen, Beobachtungen und Vorschläge* (Nuremberg, 1836).
15. Anton J. Liebl, *Die Privat-Eisenbahn München-Augsburg (1835- 1844)* (Munich, 1982).

16. Alexander Lips, *Die Unanwendbarkeit der Englischen Eisenbahnen auf Deutschland und deren Ersatz durch Dampffuhrwerk auf verbesserten Chausseen am Anfange einer neuen Ära* (Marburg, 1833).
17. _____, *Der Rhein-Donau oder Ludwigskanal in seinem Welthandelsmoment* (Nuremberg, 1836).
18. _____, *Die Nürnberg-Fürth Eisenbahn in ihren nächsten Wirkungen und Resultaten* (Nuremberg, 1836).
19. (Ludwigs-Eisenbahn Gesellschaft in Nürnberg), *Erster Bericht uber die Ludwigs-Eisenbahngesellschaft in Nürnberg* (Nuremberg, 1833).
20. Alexander Richard Wilhelm Marx and Friedrich Schultheiss, *Pittoreske Ansichten des Ludwig-Donau-Main Kanals* (Nuremberg, 1845).
21. Wolfgang Karl Mück, *Deutschlands erste Eisenbahn mit Dampfkraft* (1968).
22. Georg Platner, *Die erste Eisenbahn Deutschlands zwischen Nürnberg und Fürth, 1835* (Nuremberg, 1839).
23. Walter Popp, *Gründung und Verwaltung der ersten deutschen Eisenbahn der Ludwigsbahn zwischen Nürnberg und Fürth* (Erlangen, 1943).
24. G. Rebenstein, *Stephensons Locomotive auf der Ludwigs- Eisenbahn von Nürnberg nach Fürth in ihrer Ruhe und Thätigkeit dargestellt* (Nuremberg, 1836).
25. Hektor Rössler, *Technische Beschreibung der Eisenbahn von Nürnberg nach Fürth* (Darmstadt, 1837).
26. Johannes Scharrer, "Deutschlands erste Eisenbahn mit Dampfkraft oder Verhandlungen der Ludwigs-Eisenbahngesellschaft," in *Nürnberg von ihrer Entstehung bis zur Vollendung und Erfolg der ersten drei Monate* (Nuremberg, 1834).
27. Julius Graf von Soden, *Der Maximilianskanal* (Nuremberg, 1822).
28. Bernhard Stumpf, "England, das Mutterland des Eisenbahnwesens und die erste deutsche Eisenbahn, die Nürnberg-Fürth Eisenbahn," *Archiv für Eisenbahnwesen*, 58 (1935), 851-58.
29. Werner Walz, *Deutschlands Eisenbahnen 1835-1985* (Stuttgart, 1985).
30. M. L. Wellmer, *Bericht an die Herren Aktionäre und an das Publikum über die Ludwigs-Eisenbahn Angelegenheit* (Nuremberg, 1835).
31. _____, *Geheimer Vortrag für die nächste General Versammlung der Ludwigs-Eisenbahn* (Nuremberg, 1836).
32. Gunther Witt, *Die Entstehung des nordostbayerischen Eisenbahnnetzes* (Erlangen and Nuremberg, 1968).
33. Carl Woelfel, *Georg Zacharias Platner* (Munich, 1935).