



THE UNIVERSITY *of* EDINBURGH

Edinburgh Research Explorer

## A systems perspective on the death of a car company

**Citation for published version:**

Oliver, N, Carver, M & Holweg, M 2008, 'A systems perspective on the death of a car company', *International Journal of Operations and Production Management*, vol. 28, no. 6, pp. 562-583.  
<https://doi.org/10.1108/01443570810875368>

**Digital Object Identifier (DOI):**

[10.1108/01443570810875368](https://doi.org/10.1108/01443570810875368)

**Link:**

[Link to publication record in Edinburgh Research Explorer](#)

**Document Version:**

Peer reviewed version

**Published In:**

International Journal of Operations and Production Management

**Publisher Rights Statement:**

This is an author's accepted manuscript of the following article: Oliver, N., Carver, M. & Holweg, M. 2008, "A systems perspective on the death of a car company", in *International Journal of Operations and Production Management*. 28, 6, p. 562-583, © Emerald Group Publishing Limited. The final publication is available at <http://dx.doi.org/10.1108/01443570810875368>

**General rights**

Copyright for the publications made accessible via the Edinburgh Research Explorer is retained by the author(s) and / or other copyright owners and it is a condition of accessing these publications that users recognise and abide by the legal requirements associated with these rights.

**Take down policy**

The University of Edinburgh has made every reasonable effort to ensure that Edinburgh Research Explorer content complies with UK legislation. If you believe that the public display of this file breaches copyright please contact [openaccess@ed.ac.uk](mailto:openaccess@ed.ac.uk) providing details, and we will remove access to the work immediately and investigate your claim.



## **A SYSTEMS PERSPECTIVE ON THE DEATH OF A CAR COMPANY**

Nick Oliver<sup>1</sup>, Matthias Holweg<sup>2</sup> and Mike Carver<sup>3</sup>

*Submitted to IJOPM*

*First Revision, 19<sup>th</sup> June 2007*

*Second Revision, 3<sup>rd</sup> February 2008*

*/Third Revision 19 February 2008*

<sup>1</sup> Nick Oliver (Corresponding author)  
University of Edinburgh Business School  
University of Edinburgh,  
7 Bristo Square,  
Edinburgh EH8 9AL  
Email: nick.oliver@ed.ac.uk

<sup>2</sup> Matthias Holweg  
Judge Business School,  
University of Cambridge  
Trumpington Street,  
Cambridge CB2 1AG, UK  
Email: m.holweg@jbs.cam.ac.uk

<sup>3</sup> Mike Carver  
46 Merrivale Square  
Oxford,  
OX2 6QX  
Email: neville.carver@btinternet.com

# THE DEATH OF A CAR COMPANY

## ABSTRACT

*Type of paper:* Case study.

### *Purpose*

The aim of this paper is to understand how large and apparently successful organizations enter spirals of decline that are very difficult to reverse. The paper examines the case of Rover, once one of the largest car producers in the world, which collapsed in 2005. An analysis of strategic and operational choices made over a period of 40 years investigates the reasons for, and consequences of, a growing mismatch between the *context* faced by the company (industry dynamics, market conditions) and its *operational capabilities*, a mismatch that ultimately brought about the company's demise.

### *Methodology/Approach*

The paper is based on interviews with 32 people, including senior managers (including four chief executives), government ministers and union officials who were key decision-makers within, or close to, the company during the period 1968 and 2005. Secondary sources and documentary evidence (e.g. production and sales data) are used to build up a historical picture of the company and to depict its deteriorating financial and market position from 1968 onwards.

### *Findings*

The company was formed from a multitude of previously independent firms as part of a government-sponsored agenda to build a UK national champion in the car industry. The merged company failed due to several factors including poor product development processes, poor manufacturing performance, difficult labour relations, a very wide product portfolio and a lack of financial control. Although strenuous efforts were made to address those issues, including periods of whole or part ownership by British Aerospace, Honda and BMW, the company's position deteriorated until eventually production volumes were too low for viable operation.

### *Implications*

The case of Rover highlights the importance of what has been termed 'the management unit' in complex systems. The management unit comprises processes and routines to deal with challenges such as managing product portfolios, connecting strategic and operational choices, and scanning and responding to the environment. In the case of Rover, a number of factors taken together generated excessive load on a management unit frequently operating under conditions of resource scarcity. We conclude that viewing corporate failure from a systems perspective, rather than in terms of shortcomings in specific sub-systems, such as manufacturing or product development, yields insights often absent in the Operations Management literature.

**Keywords:** Automotive industry, strategy, operations, business failure.

# THE DEATH OF A CAR COMPANY

## INTRODUCTION

The start of the second automotive century has been interesting for the global motor industry. The industry has seen both record profits and losses, as well as bankruptcies amongst global suppliers and manufacturers, some of the largest industry mergers and de-mergers, and – largely thanks to emerging new markets – increased global demand for automobiles.

Recent dynamics within the global motor industry have several implications for the academic study of the industry. Regional stereotypes that in the past have predominantly compared Japanese producers to their Western counterparts (for example Womack et al. 1990, Cusumano and Takeishi, 1991; Hines 1998) now only partially hold. All but two Japanese vehicle manufacturers have been taken over, or had major stakes acquired, by Western manufacturers. Nissan, for example, which was once were the subject of best practice case studies (DETR 1998), faced near-bankruptcy in the late 1990s and merged with Renault.

The changing fortunes of the automotive industry have affected firms in Japan, Europe and the US alike. Most prominently, the cost of restructuring (and downsizing) in the US automotive industry has impacted on US domestic manufacturers in particular. The Ford Motor Company posted losses of \$12.6bn in 2006, and \$2.67bn loss in 2007; GM faced similar losses of \$8.6bn in 2005, but has since returned to marginal profitability (Company Annual Reports). The future of Chrysler is uncertain after its 2007 de-merger from Daimler, a joint venture that entered the record books in Germany as destroying the most value (approx. €40bn) in the country's post-war history. The Western European industry has seen a stream of production facilities relocating to Eastern Europe, putting further strain on national champions such as Renault, Volkswagen and Fiat. Moreover, incumbent manufacturers are threatened by a wave of low-cost imports from China and India, following the same pattern of the Japanese makers in the 1970s, and the Koreans in the 1990s. In short, the level of competition in this very mature industry has reached a level where it threatens the survival of new-entrant and established players alike. In 2005 Rover, as one of the weakest of the established players, was the first “national champion” in the Western world market to exit the industry.

In this paper we will explore how a large corporation entered a dynamic that ultimately led to its demise. We do so by telling the story of the Rover car company, which went from being one of the largest car producers in the world to oblivion over a period of 40 years.

Our point of departure is that the automotive industry, like other industries, follows a technology cycle. More or less all countries with indigenous car industries have been through a pattern of proliferation and consolidation of numbers of producers (Utterback, 1994). The emergence of a new technology (such as the internal combustion engine at the end of the 19<sup>th</sup> century) typically creates an influx of players, all keen to try their hand in the new arena. This period usually lasts until a dominant design emerges (for example, in the case of passenger cars, the use of four wheels, propulsion by an internal combustion engine, an enclosed steel body, etc). At this point the basis of competitive advantage shifts to away from issues of basic design and configuration, around which producers converge, and towards product and organizational attributes such as production efficiency, style, marketing or other criteria. Less capable companies are forced to exit the market, or are taken over by the stronger ones. In the US, for example, in the mid-1920s there were 75 vehicle producers, but by 1960 this was down to 10, and in 2006 there are just three. In the UK, no fewer than 221 vehicle producers entered the market between 1901 and 1905, of which 90% had either exited the sector or gone out of business altogether by 1914 (Saul, 1962). In 1920 in the UK there were 90 manufacturers of passenger cars; by 1929 this had dropped to 41; by 1939 to 33; by 1946 to 32; and by 1950 there were just 20 – about the same as the number of producers in the US at that time, but with a much smaller total production volume (Church 1994).

The significance of these patterns to this paper is that our analysis of the failure of Rover should be seen against a background of industry consolidation and rationalization (at least in the mature economies) that has been occurring over many decades, and in which there are inevitably winners and losers. Our purpose in the paper is to understand why one particular company, once in a position of apparent strength, disappeared from sight. Did Rover lack capabilities that other car companies possessed? Or did the company face particular circumstances, that other car companies did not, that brought about its demise?

This paper and the research on which is based did not start out as a conventional piece of hypothesis or theory testing. When Rover collapsed in 2005 we became

curious about the reasons for this, partly because of the explanations for the collapse that appeared in the media. These largely focused on recent management decisions, and placed the blame for the collapse on the Phoenix Consortium, who owned the company for the final five years of its life. Although not explicitly stated, we set out with the implicit assumption that at least some of the factors that brought about the ultimate demise of Rover predated the Phoenix ownership; we also assumed that these dynamics could not be understood purely on the basis of secondary data, and that we would therefore need to gather data on the perceptions and context that senior decision-makers faced throughout the history of the firm.

We therefore interviewed a cross-section of key people involved in the company from its creation in the late 1960s through to its collapse in 2005, complemented with an analysis of secondary sources, as described in the section on the research approach. Preliminary analysis of these data revealed that the company faced many challenges. At various times in its life these included deficiencies in product development processes and manufacturing systems; chronic labour relations problems; a very challenging economic environment due to trade liberalization and unfavourable exchange rates; and multiple changes of ownership, including a substantial period under government ownership. Consequently, identifying a conceptual framework that was simple enough to be comprehensible and yet at the same time comprehensive enough to cope with such a diverse set of issues was a major challenge.

In practice, this occurred in two stages. First, a brief review of the Operations Management literature was used to construct a basic framework to understand the core processes and capabilities of a car company. Secondly, ideas from the literature on systems thinking, in particular those on viable systems (Beer 1984) were used to provide insight into how the company failed as a complete system. We turned to systems thinking because it became clear that the company faced multiple challenges and failings in a variety of sub-systems, not just one or two. Moreover, it was also clear that many people in the company were aware of these failings at the time, but for a variety of reasons appeared incapable of correcting them. This suggested that a systems perspective might be the most appropriate one to take.

### **Capabilities of a Car Company**

There is clearly much more to being a car company than simply assembling vehicles, even though this is the most visible part of the process of vehicle production.

Car making comprises a complex set of processes, and orchestrating these successfully is a major organisational challenge. A typical vehicle comprises 10-15,000 individual parts, sourced by the manufacturer in the form of 2,000-4,000 distinct components (Holweg and Pil, 2004), and a typical volume car model will have a production run comprising of 500,000 units or more.

In this section we develop a framework for analysing the core capabilities that car companies must possess if they are to be effective. We use Heller, Fujimoto and Mercer's (2005) definition of a 'fully capable' car company as one that is 'able to independently design, manufacture and market a vehicle'. These capabilities are shown diagrammatically in Figure 1 and their key characteristics are summarized in Table 1.

Figure 1 depicts the classic process of product development, production and distribution typical of an automotive value chain. New product development typically begins with analyses of both market needs and available technologies; the relative influence of these determine whether a process is "technology push" or "market-pull". Such intelligence informs choices in product design and development, although the extent to which this happens in practice can vary considerably.

Take in Figure 1

In the automotive industry, developing new products involves many functions within the car companies themselves, and dozens, possibly hundreds of suppliers. These include engineers and designers who design the product, suppliers who provide a variety of specialist parts, and the manufacturing function who have to produce the vehicles in high volume and consistently to the required levels of quality and cost (Clark and Fujimoto 1991). The development of a new vehicle demands many thousands of choices and decisions, large and small, by many people. Over successive development cycles these choices and decisions combine to give companies and their products particular attributes - capabilities, scale, brand values and other sources of competitive advantage - or disadvantage. Strong brands, such as the BMW brand with its image of the 'ultimate driving machine' or Audi's 'Vorsprung durch Technik' do not develop overnight, but rather require years, perhaps decades, of consistency in how choices in design, manufacturing and marketing are made and presented to consumers (Bayley, 1986). Similarly, companies that lack consistency in such decisions, for

example across models or over time, for example due to changes in personnel or ownership, may suffer from weak or confused brand attributes (Aaker, 1991).

Take in Table 1

The core capabilities in Table 1 are well recognized in the Operations Management community. They include processes of product development (Clark and Fujimoto, 1991), manufacturing (Schonberger, 1982; 1986; Womack, Jones and Roos, 1990), buyer-supplier relations (Lamming, 1993; Sako, 1992) and logistics and distribution and retail (Kiff, 1997; Holweg and Pil, 2004; Reichhart and Holweg, 2007). Other processes, such as market intelligence and the management of retail systems have generally received less attention by the Operations Management community, although such analyses do exist (Delbridge and Oliver 1991; Oliver and Delbridge 1991).

### **Viable Systems**

Although the core capabilities framework goes a considerable way to providing a diagnostic for success and failure in the auto industry, preliminary analysis of the Rover data indicated that of itself the core capabilities framework did not explain the whole picture. As we shall see, many people within the company, at various points in its life, were acutely aware of shortcomings in areas such as product development, manufacturing and labour relations and there were strenuous efforts to correct these. The problem seemed to be that addressing all of these issues *together* and sufficiently *rapidly* appeared to be beyond the reach of successive management teams. This appeared to be a function of the totality of the parts, rather than any individual element, and this realization led us towards systems theory, specifically the work of Stafford Beer (1994) on systems viability, in search of an appropriate additional conceptual framework.

The chief proponent of theory on systems viability is Beer. Beer's ideas have been developed in a number of books and articles (Beer, 1972; 1979; 1984; Jackson, 2001) and we shall simply summarize the key points here. Beer's first concept is that the major challenge in managing any system is variety - that subsystems must be controlled by a meta-system, or "management unit" and that the capacity of the

metasystem to process information must be commensurate with the ability of the sub-systems to generate it - otherwise overload will result, and the system is likely to enter a catatonic state, and become paralysed. This builds on Ashby's "Law of requisite variety" (1956) and is similar to the information-processing perspective on organizational design (Galbraith 1974), which maintains that the critical limiting factor of an organization is its ability to process information. Thus, managers within an organization that faces too many problems simultaneously may be acutely aware of the shortcomings in particular areas, but be unable to devote sufficient attention to resolve these, due to demands in others.

A second key concept is that below the meta-system are four subsystems, the precise details of which need not concern us in this paper, but which comprise critical functions or operational subsystems and that absence or inadequacy on the part of these can threaten system viability. Examples include sub-systems to monitor the environment, to make policy, and integrate the activities of operational subsystems.

A third concept is that diversity of goals. Most organizations serve multiple stakeholders and must therefore of necessity pursue multiple goals. However, Beer argues that if there are too many divergent views of what a system should do goals may be incommensurate, leading to the problems of paralysis described above. Partly this is a problem of attention – the 'management unit' is forced to meter out its attention to too many lines of activity. However, it is also a political issue, in that building support for a particular strategy or direction is that much more difficult when views as to the purpose and priorities of the organization are widely divergent.

With this background the questions and objectives of this paper can therefore be summarized as follows:

- How can the failure of Rover best be understood?
- Through analysis of the failure of Rover can we identify patterns that may apply to other examples of corporate failure?
- To what extent can systems theory provide a useful framework to think about failure in large complex organizations?

## **RESEARCH APPROACH**

The demise of the British motor industry has been the subject of several analyses (see for example Dunnett, 1980; Church, 1994; Whisler, 1999). Commonly

based on secondary sources, these contributions describe in detail the patterns of *how* BLMC/British Leyland/Rover (the company was re-named a number of times during its life) and the British motor industry in general, declined over time. However, most provide only limited explanations as to *why* British Leyland/Rover entered such a spiral of decline. While this paper also draws extensively on secondary sources (production data, annual reports, government select committee meeting notes, official reports, previous published studies), our assessment as to why BL/Rover failed is complemented by a total of 32 interviews with a cross section of people involved with the company in a variety of roles. These include 19 senior executives, including several CEOs who ran the company during the period 1968-2005, nine executives from Honda, Rover's partner for 15 years, a major figure in the company's retail and distribution network, a senior union official, and two former government ministers responsible for industrial policy. The interviews were conducted between October 2005 and August 2007, after the company had collapsed, and typically lasted between one and three hours. They focused on the choices and events that, in the view of the interviewee had proved critical to the fortunes of the company.

The interviews followed a common format, with variations according to the position of the particular interviewee and the period with which they were most familiar with the company. Figures 3,4 and 5, which show Rover's volume of output and market share between 1970 and 2005 were produced from secondary sources before the interviews commenced, and these were presented to the interviewees, who were asked to tell their version of 'the story behind the numbers ', with particular reference to the period in which they were most closely associated with the company.

Interviews followed a common schedule. Each interview commenced by asking interviewees to describe:

- Critical events – both internal and external to the company
- Key opportunities that presented themselves to the company – possibly opportunities that were not recognized as such at the time
- Key choices, both correct and incorrect (and possibly only recognizable as such with hindsight)
- Key market and competitor dynamics
- Conclusions about this period, including how the company compared to its competitors during this time

Interviewees were asked to do this period by period, the periods being:

- Mid 1960s to 1975 (up to nationalization)

- 1975 to 1987 (Nationalization/Honda)
- 1987 to 1994 (Bae/Honda)
- 1994-2000 (BMW)
- 2000-2005 (Phoenix)
- 2005- Brief predictions for the future (e.g. Rover under Chinese ownership).

As the research covered a period of 40 years, no single interviewee had detailed information about the whole period, but several overlapped in their times with the company. Where this was the case differences in perspective were surfaced and tested, by feeding back the accounts of interviewees (unascrbed) to others and asking them to comment. Some of these differences in perspective were profound, An example of this were labour relations and the role of organized labour in the company's decline; those speaking from a union perspective had a very different view of history from those speaking from a management perspective.

Throughout this historical account interviewees were also asked questions about particular processes within the company and how these were enacted at different times. These included perceptions of the company's strengths and weaknesses in different areas, including marketing, product development, manufacturing, suppliers, distribution and sales and so on. All interviewees were also asked when, in their view, the company passed the point of no return, a question which elicited an extraordinarily wide range of responses. All interviews were recorded and professionally transcribed.

The account presented in this paper thus represents 'a best fit' of what is in fact a complex and in some areas contested story.

## **THE ROVER STORY**

Rover's history in many ways reflects the classic pattern of industry proliferation and consolidation described by Utterback (1994). As the UK auto industry matured, there were closures and mergers, but in the post-WWII period the industry was still relatively small in terms of its aggregate output and fragmented in its ownership and production organization. There were successive mergers and attempts at consolidation from 1950 to 1970 as explicit efforts were made to build a British automotive company capable of holding its own in the world. Ford in particular was regarded as the model to emulate. Although there were a number of amalgamations during the first half of the 20<sup>th</sup> century, this began in earnest with the merger of Austin and Morris in 1952 into the British Motor Corporation (BMC). Jaguar joined in 1966 and the company became British Motor Holdings (BMH). In 1960 Standard-Triumph became part of Leyland Motors as did Rover, in 1967. These two groups, British Motor Holdings and what was by then the Leyland Motor Corporation, joined together to form

the British Leyland Motor Corporation (BMLC) in 1968. Thus, consolidation took place over a period of years but the life of the consolidated firm was relatively short. By 1984, under the wing of a Conservative government committed to privatization, a process of disaggregation was underway, with several operations either floated off as independent enterprises or sold to other car companies (e.g. Jaguar, Leyland trucks, Unipart). The main steps in this process of consolidation and disintegration are shown in Figure 2.

Take in Figure 2

Thus, the Rover car company had not one, but many different starting points. Rover itself was established, as a bicycle manufacturer, in 1878 with its first car produced in 1904. Triumph, Austin and Morris were all established between 1885 and 1915. Austin and Morris joined forces in the 1950s and formed BMC, the idea being to create a British car manufacturer to rival Ford. However, the Austin-Morris merger was largely defensive and the animosity that existed between the two companies prior to merger continued post-merger. This rivalry impeded efforts to build a single company and lingered for many years. Despite this, BMC pioneered a number of influential innovations, such as the Mini, launched in 1959. This was an Austin product and was designed by Alec Issigonis, who had also designed the Morris Minor. The Mini was the first car to combine front-wheel drive and a transversely mounted engine using continuous velocity joints in the drivetrain. This breakthrough subsequently became the industry standard in layout for small to medium-sized vehicles and the Mini was to stay in production for over 40 years. Commercial success, however, was more elusive; relatively high costs and a low selling price meant that the margins on the Mini were wafer thin, and at some points in its life, negative.

For Rover, not yet part of BMC, the 1950s and 1960s were fruitful years, with the success of Land Rover. Rover also conducted pioneering research into gas turbine vehicles. In 1967, Rover became part of the Leyland Motor Company, marking the end for Rover as an independent company.

When BLMC was formed in 1968 the combined company enjoyed production volumes of close to one million units in the early 1970s, but struggled to integrate its operations across the different constituent companies. Consolidation occurred, but the integration upon which the success of the consolidation depended, did not.

With worsening finances, BLMC was nationalised in 1975 and renamed British Leyland. It received a £2 billion government cash injection (an equivalent of £11.4 billion in 2005 terms, calculated by GDP deflation) to modernise its plants and its products, but matters continued to worsen. Michael Edwardes was brought in as CEO in 1977 to steer the company forward (renaming it ('BL Ltd') and the company joined forces with Honda in 1979, as it became clear that the company was incapable of developing sufficient new models on its own. In 1979 Honda signed a collaboration agreement, and granted Rover the right to produce one of its models, sold as the Triumph Acclaim. Honda later agreed that Rover should produce other Honda designs for sale as Rovers and produce some Honda vehicles in the UK on Honda's behalf. Subsequently the two companies arranged a cross-shareholding with Honda taking a 20% stake in Rover, and Rover taking a 20% stake in Honda's European manufacturing operation.

In 1982, there was another name-change; British Leyland became Austin Rover. The Rover badge was used on a range of cars co-developed with Honda: the first Honda-sourced model to carry the Rover badge, released in 1984, was the Rover 200, which, like the Triumph Acclaim that it replaced, was based on the Honda Ballade. In 1986, the Rover SD1 was replaced by the Rover 800, which was based on the Honda Legend. That year Graham Day became head of the company which in 1987 was renamed 'the Rover Group' and adopted a one-brand strategy. The Austin Maestro and Montego, by then badged as Rovers, were replaced by the Rover 400 and Rover 600 which were based on Honda's Civic and Accord platforms.

In 1988 the company was sold to British Aerospace (BAe). It remained under BAe's ownership for six years, until in 1994 BAe put Rover up for sale as part of a move to focus effort on their core aerospace business; Rover was sold to BMW. Shortly before the deal was closed, strenuous attempts were made to convince Honda to increase its stake from 20% and take over Rover, but Honda refused to do this. Even on the morning when the deal with BMW was due to be closed, Rover executives were in Tokyo trying to persuade Honda to take a majority stake in Rover, but Honda would not increase its share to more than 47.5%. This was not sufficient for BAe, and so Rover passed to BMW for £800 million. BMW invested considerably in Rover, in particular the development of the Rover 75 and the New Mini.

Six years on, in May 2000, after two consecutive years of heavy losses and failure to secure sufficient government subsidies for the replacement for the mid-range

25 and 45 models, BMW broke up the business and Rover was sold. One of the would-be buyers was a group of venture capitalists, Alchemy Partners, but there was widespread resistance to Alchemy in favour of the Phoenix Group, headed by former Rover CEO John Towers, who had left the company after the takeover by BMW. Alchemy had proposed to convert Rover into a low-volume sports car company, focussing on MG-branded sports cars, a concept initially favoured by the government, but abandoned after workers' protests in London. Subsequently, the Phoenix offer was supported. Phoenix bought Rover for £10 and pledged to keep all employees in work, aiming to return a profit within two years. Renamed "MG Rover", the company received a 49-year loan of £470m by BMW and a licence to use the Rover brand.

At the same time, BMW sold Land Rover to Ford for £1.8bn, including the Gaydon R&D facility and the Solihull plant. BMW retained the new Mini, launched in 2001, and the facilities to build it at Cowley, near Oxford. As a result, Rover 75 production was moved to Longbridge. Rover now produced the 25, 45, and 75 at Longbridge, but was now deprived of two of its key brands (Mini and Land Rover), and having lost most of its R&D personnel due to the sale of Gaydon.

From 2000 onwards the decline of MG Rover continued. In 2001, eight month operating losses of £254m were reported. Amidst the acquisition of the Italian sportscar maker Qvale (which led to the creation of the SV sportscar, of which a total of 25 were sold by April 2005), the company announced an alliance with the Chinese group China Brilliance, to help fund investment in new models. However, this deal was not completed, despite an initial cash injection by the Chinese company. In 2003 there were losses of £77m and production output fell further. In an effort to raise cash, the Longbridge site was sold for £45 million, and leased back. In November 2004 a plan for a £1bn joint venture with the Shanghai Automotive Industrial Corporation was announced, and the rights for the 25, 75 models and the K-series engines were sold to SAIC (another Chinese automotive firm) for £67m.

By March 2005 sales had continued to fall, and some suppliers were demanding cash payment upon delivery of components. A rescue mission to save the SAIC deal in April 2005 failed, although a bridging loan of £100m by the British Government was offered, and some suppliers stopped their deliveries of components. On 15 April 2005, all 5,100 Longbridge workers faced redundancy after production was halted there. A century of car production at Longbridge had ended. In July 2005 Rover's remaining assets were sold to Nanjing Automotive, who dismantled the majority of production

assets and shipped them to China. Since “token” low-volume production of MGF sports cars at Longbridge has resumed. In September 2006 there was another twist; Ford exercised its right to buy the Rover trademark under the terms of its purchase of Landover in 2000, largely as a defensive measure to protect the Land Rover brand. Nanjing responded by creating the ‘Roewe’ brand (‘Rong Wei’ or ‘Grand Prestige’ in Chinese), with a logo strongly resembling the old Rover badge.

In June 2007, Ford announced its intention to sell both Land Rover and Jaguar, with Tata emerging as a likely buyer. Shanghai and Nanjing automotive corporations announced a government-supported merger in early 2008, reuniting the IPR and production assets needed to build the previous Rover models and engines in China.

## **ANALYSIS**

Having sketched out the story of Rover, in this section we examine the each period in the company’s history in more detail. Of necessity, our treatment is selective, in that it is clearly difficult to cover all the details of a period of nearly 40 years in a short paper. We highlight those issues that emerged repeatedly across multiple interviewees as significant in the company’s decline. The declining output of the company between 1968 and 2005 is shown in Figure 3. We shall refer to this repeatedly as we analyse events at Rover.

### *1968-1975 – The First Years of the Conglomerate*

As we have seen, in 1968, the company, then named BLMC, was formed out of a disparate set of previously independent companies, some of them themselves formed from previous amalgamations. This paper deals only with the cars operations, but for the first 15 years of its existence the conglomerate produced much more than just cars. Its output included trucks, buses, construction equipment, commercial refrigeration equipment and a miscellany of other products. This wide range of products greatly complicated the overall management task and reduced the focus - and resources - available for the development of the car business, consistent with Beer’s observations on requisite variety. Indeed, until 1975 there was no single unit in control of all car operations. There was a history of strong concept engineering, which generally stemmed from exceptional single designers, such as Alec Issigonis in the case of the Mini and 1100/1300 series, and Spen King in the case of the Range Rover. One of the

product development executives who we interviewed reported how Issigonis resisted evolutionary changes to his original design, even though market analysis indicated that these would increase the vehicles' appeal. Another interviewee, a member of the Board during the 1970s and 1980s, reported the same pattern with respect to King and the Range Rover, which was not produced in a four-door version until many years after its launch. A side effect of such behaviour was an emphasis on what might be termed 'intuitive engineering' and a consequent lack of process and discipline. This had at least three effects. First, with increasing vehicle complexity and sophistication, intuitive approaches to engineering were progressively less capable of delivering the consistency, thoroughness and follow-through necessary to produce well-engineered vehicles.

Secondly, the presence of a small number of outstanding engineers generated and perpetuated a myth that engineering competence was actually higher than in fact it was – previous strength in what was essentially concept engineering was over-generalized to other aspects of the company's operations. This is quite a subtle process, and hinged on the existence of high-profile examples that run counter to a general trend, therefore allowing participants to believe that criticism of vehicle design and quality was less warranted than it actually was. In Rover's case this perpetuated a belief that things were much better than they actually were in terms of basic standards of engineering and manufacturing. Third, 'hero-engineers' felt a strong sense of ownership of their concepts and were resistant to subsequent changes to the products that were the embodiment of these, even if this was clearly what the market was demanding. For example, Issigonis resisted the replacement of his original sliding windows with wind-down windows on the Mini, and King blocked the addition of a four-door model to the Range Rover series (his original had only two doors) for many years. As a product development executive explained:

'The engineer was held as a bit of an idol, not only in the company, but outside as well. It was really critical, so if anybody challenged their territory it was a matter of life and death, almost. A lot of the energy of the company was actually involved in this internal positioning, rather than saying, 'the Japanese are producing some interesting things, Fiat have got some stuff, VW are producing the Golf'. These things were going on outside, but a lot of the energy was about how to hold on to your territory, and create things in your part of the company.'

Many car companies have grown through a process of relatively strong, large companies acquiring relatively weaker, smaller ones. There have of course also been examples of mergers of pairs of relatively equal companies such as Renault and Nissan and Chrysler and Mercedes-Benz, but these are relatively unusual. In the case of BLMC, what effectively occurred was the simultaneous amalgamation of many previously independent companies, some with niche strengths (such as Rover, Jaguar) but combined with the volume business of Austin-Morris which was described by several interviewees as 'a mess'. As one of the ex-Rover CEOs put it:

'When I joined in '69 I joined a sprawling, fragmented, disparate entity called BLMC, which had just been formed. Looking back, Donald Stokes [the first CEO] had been handed an impossible restructuring task. [...] It was the mother of all integration projects.'

When companies grow organically, they gradually develop the capabilities necessary to manage enormous scale and complexity – what we earlier termed the 'management unit' - techniques of financial control, costing, budgeting, marketing and portfolio management commensurate with their scale. In Beer's terms, this ensures that the sophistication of the coordinating mechanisms is commensurate with the variety of operations that have to be coordinated. Yet BLMC was essentially a collection of relatively small owner-managed enterprises (in ethos, if not necessarily legally so), each of which individually lacked these capabilities. Moreover, some of these were themselves in a very weak condition, so it was not that they could be left to their own devices with any great prospect of prospering. With hindsight, combining them made the problems worse, not better. John Egan, who was later to become CEO of Jaguar described it thus:

'You had all of these currents running through the BL story of how they didn't know how to design new products, poor industrial relations, a poor rationalisation program, really quite anarchic in terms of managerial process. You had government programs going on like regionalisation and stop-go, which didn't give them much of a chance either, and a relatively ill-educated management team. You add it all up and the chance that possibly they had was frittered away between 1970 and 1974. There was no coherence in anything.'

There were attempts to redress these shortfalls in the management system, one manifestation of which was significant recruitment from Ford, particularly in the areas of finance and product planning. However, in the early days the central staff who were

tasked with doing this were very few in number – an estimated 20 people, which for a very diverse organization of nearly 200,000 was extremely small.

Even before the creation of BLMC, Austin-Morris had been generating insufficient funds for model renewal, and the amalgamation created another layer of problems and complexity with which the corporation was ill-equipped to deal. Whilst struggling with its post-merger issues, in the early 1970s BLMC was hit by two forces over which it had no control – the removal of tariffs on vehicle imports into the UK with Britain's entry into the European Union, and the first oil shock. These, combined with the company's weaknesses in design and production quality, produced a catastrophic fall in output, from around 900,000 units a year in 1971 to just 600,000 in 1976. The oil shock hit all car producers of course and output dipped across the industry. However, for most producers output recovered, but for BLMC it did not, apart from a brief uplift in 1976, as shown in Figure 3.

Take in Figure 3

#### *1975-1987 - State Ownership*

In 1975, nationalization brought a substantial injection of funds, and the slogan was 'product-led recovery'. However, although the injection of resources could have addressed the shortage of funds to develop new products, the underlying capability to do so was still seriously lacking. In the two years following nationalization little or no discernible improvement occurred and Michael Edwardes was brought in as CEO in 1977. He took improvement of industrial relations as his major project - poor industrial relations had been a major factor in the problems that the company was experiencing. As Edwardes described:

'What one had to do at that point was slim down the company to its competitive position, which meant a lot of people going, and then you'd got to slim down to the point when there wasn't the volume, and so it went on. [...] There had been enormous industrial relations problems and I think that I was doing a mopping-up job when I came in.'

'For 10 years there were no product profit and loss accounts. It took us into '78, I went in in November, we got our first stab at product profitability in the first half of '78. I couldn't believe it. For 10 years they were flying blind'.

This further illustrates the difficulty with the management system of the enterprise, but the emphasis on industrial relations, however essential, produced another side effect, which Edwardes freely acknowledges, and that was a diversion of attention away from other pressing matters:

‘We got distracted. Where the Germans were spending 80% of their time on product, I was spending 80% of my time on industrial relations, so that was a total waste.’

By the end of the Edwardes period in 1982, output stabilized at around 400-500,000 units per annum, and industrial relations had improved, due to Edwardes’ efforts to break the power of the more militant trade unions on the shopfloor. The company had been rationalized considerably, had been renamed ‘BL’, there was now an integrated model programme, and there was considerably more coherence than there had been 10 years before. The company was developing a new range of models in the the Metro, Maestro and Montego, but sales of current models were falling, and BLMC’s new executive car (the Rover SD1, launched in 1977) on which much depended, was beset with quality problems and failed to meet its sales targets. This failure followed the failures of the Allegro (a small to mid-sized car) and the TR7 (a two-seater sports car). Combined with product inadequacies, these failures reduced sales volumes to levels that made independent viability impossible, as the company lost the resources and capacity to renew itself through new product development.

Recognizing the product development shortfalls in the company, and the acute need for a model to plug the mid-range gap until the Maestro came on stream, BL sought a partner who could provide it with a new model. An alliance was struck with Honda of Japan in 1979. At the time BL was actually the larger car company, a sign of the stark contrast between Honda’s growth and BL’s decline since that time. Honda was a partner to Rover for 15 years, and provided Rover with a number of successful new models throughout the 1980s and early 1990s, but the partnership ended abruptly when Rover’s owner, BAe, sold Rover to BMW in 1994. It is clear that BL/Rover learnt a great deal from Honda, though there were clear tensions as the different standards of the two companies were reconciled. As one of our Honda interviewees commented:

‘We found that on average each Rover-produced car had well over 100 faults. Many of these faults were very small, but Honda standards were high and our attitude was that in order to maintain our standards, every fault however small, had to be dealt with [...] Of course we reported to Rover what we had found. Their response was one of disbelief. They said that, in general, their customers were finding few faults in the Rover versions of the cars in question and they could not accept the Honda results. There was a lot of discussion between the two companies and we explained the Honda attitude and tried to demonstrate the faults.’

The same interviewee also commented that there was, at best, ambivalence on the part of some very senior people at Rover about the Honda relationship, and a continuing reluctance to accept and act upon Honda’s advice:

‘I was aware that there wasn’t wholehearted support, among quite a lot of senior Rover people, for the relationship. I think that the position broadly was that people didn’t like the relationship very much; they didn’t necessarily want to work very closely with Honda, but they did see – a lot of them saw – that it was necessary.’

The consequence of these different approaches was graphically illustrated by the reception of the Honda Legend and Rover 800 (Sterling) in the US. This was a joint development between the two firms, and was the model that was supposed to re-launch Rover in the US market. The underlying design of the two derivatives was essentially the same, yet the Honda version was virtually at the top of the JD Power quality index when the Rover version was almost at the bottom of the same ranking. Analysis of the failures revealed that it was largely the Rover-designed or Rover-modified parts that were the source of these problems.

#### *1987-1994 Privatisation and BAe*

When the company was nationalized in 1975, a Labour government sympathetic to state ownership was in power. From 1979 onwards there were a succession of Conservative governments, led by Margaret Thatcher, who were deeply opposed to the idea of state ownership, and whose agenda was to return the company to private ownership – or close it down – as rapidly as possible. The right hand side of Figure 2 shows this process in action, with those parts of the business that were considered saleable sold off between 1984 and 1987. Jaguar was privatized in 1984 and then bought by Ford in 1989, Unipart and Leyland Trucks were sold in 1985-6 and then

finally the cars group, by then including Land Rover, was sold to BAe in 1987. In the same way that Edwardes described how industrial relations issues were a distraction in the 1970s, interviewees from this period described how the priorities when preparing a business to be sold for sale are quite different to those when one is planning to grow and develop the business in the long term. Moreover, despite the Thatcher Government's commitment to market forces, the matter of privatization was not purely a commercial one. The near sale of the commercial vehicle operations, which at that time included Land Rover, to General Motors in 1986 foundered on a political decision that Land Rover should remain under British ownership.

Despite some rhetoric at the time about synergies between BAe's aerospace operation and Rover's car operations, by all accounts BAe was 'a hands-off' owner. Under the leadership of Graham Day, serious attention was given to image and branding, and in what was known as the 'Roverization' period all non 4x4 models were badged as Rover, the MG brand being revived in the mid 1990s with the MGF sports car. The aim was to position Rover as an upmarket, premium brand.

However, as British Aerospace came under increasing financial pressure their continued ownership of Rover was called into question. A Board member from this period described the situation as follows:

'[BAe] ran out of money, and went to the shareholders to raise more money. The offer to the shareholders was underwritten by banks, and the shareholders declined to give BAe any more money, so the banks were stuffed and had to put a lot of money into BAe. And that's why BAe subsequently didn't feel it could support the Rover cash flows, and looked for an owner for Rover. [...] The Chairman, and the Chief Executive, and subsequently the Finance Director of BAe all left as a result of that failed rights issue, and the new blood who came into BAe looked around and said, 'Rover's got to go.'

The decision by BAe to sell to BMW was controversial, as many observers felt that Rover's interests would be better served by a continuing relationship with Honda. Honda interviewees reported that at the time of the sale, Honda felt that Rover had made progress, that Rover's standards of manufacturing were rising, and might reach Honda's expectations within two years. However, Rover was very dependent on Honda for their product engineering by this stage, a factor that BMW seem to have underestimated.

During the Honda period BL/Rover's output had remained fairly stable although now below half a million units a year - too low a volume to be sustainable in

the volume market where margin per unit is relatively low. However, this stability of output occurred against a backdrop of a rising market, and domestic market share actually slipped from around 20% to 15% during BAe's ownership, as Figure 4 shows.

Take in Figure 4

#### *1994-2000 BMW*

Perhaps the single biggest mystery in the Rover story is why things went so wrong during the BMW period. When BMW bought Rover, Rover was not in a particularly strong position, but losses had been stemmed, some small profits had been returned and there was a reasonable range of models, though the small car (the Metro) was desperately overdue for replacement. Under BAe's ownership, in order to save money, it had been decided to try to combine coverage of Rover 200 category with the Metro category in the form of the 1995 Rover 200, larger than a Metro, but smaller than the previous 200 series, a strategy which turned out to be misguided.

BMW appeared to over-estimate Rover's basic capabilities when they first took them over. Moreover, they also seem to have thought that the Rover-Honda relationship would continue after BMW's purchase of Rover, something which Honda was not prepared to do. As a Honda Board member from the period explained:

'...a lot of people have asked why Honda was willing to work with Rover, but not with BMW. The official position was that we were willing to help a British company with the aim of that company becoming a self-sustaining, independent entity. We had no desire to own the company. BMW was a German company with no need of help. The circumstances were different. In reality, we did not want to work with BMW. It was a big, successful company and we did not see where getting involved would lead'.

Thus, although Honda continued to allow Rover to use Honda designs for a fee (something which they were legally under no obligation to do) the relationship and the associated support effectively ended at the point of sale. BMW did not immediately step in to replace this. As a senior Rover product planner described to us:

'[BMW] were extremely professional, to the extent that they'd all had their British cultural training, and they understood that we liked to start all meetings with a joke, so we would get a standard joke at the

beginning of every meeting, which was embarrassing to the extreme. [...] but the real reason is, I don't think they could countenance coming in to a company, and coming in with jackboots. They would be so unpopular, and culturally it would be bad karma, whatever, for them. They couldn't do it, so they let us carry on, trying to influence us, almost like they would only come in if we really failed. It was a disaster. They should have come in, they should have come in and really shaken us up, really been critical, but they didn't. They'd left the management as was, left the plan as was...'

Thus, if the problem in the past had been high variety coupled with the lack of a capable management unit, the situation was now of a much slimmed-down set of operations, but an owner that either did not understand the operations of the company it had bought, or which understood these, but perceived social and cultural obstacles to intervention.

Differences within BMW about Rover eventually led to the resignations of both Pischetsreider, the CEO of BMW and a supporter of BMW's relationship with Rover and Reitzler, the number two, who was opposed to it. BMW began to look for ways to rid itself of Rover, and entered in negotiations with Alchemy, an equity capital firm specializing in turnarounds. This revealed that Rover's management, such a source of weakness for so many years, still posed major problems. As Jon Moulton, Alchemy's CEO described to us:

'By the time we [Alchemy] got to it with BMW, the patient was terribly ill, the volumes were far too low, but still the financial control was as bad as it had ever been. BMW were unable to tell us, during negotiations, anything about the management accounts of Rover. We didn't believe them, we thought they were just hiding it. The only figures they could give us were the amount of money they were putting in each month, they gave us some numbers on the numbers of cars being sold by Rover; those numbers, unfortunately - as reported to the BMW senior management - were not actually the numbers of cars they were selling, they were the numbers on the spreadsheet out of the five year plan. And that's the honest truth. So the senior management of BMW didn't even know what volume of cars Rover were producing.'

Alchemy's bid to buy Rover was turned down in favour of the Phoenix consortium headed by John Towers, former CEO of Rover. Land Rover was sold to Ford for £1.8 billion, while BMW retained the Cowley plant to produce the New Mini, which became part of the BMW Group as an independent brand.

Take in Figure 5

### *2000-2005 Phoenix*

When Phoenix bought Rover in 2000 it was already obvious to many industry experts that the company could not survive, unless a joint venture partner could soon be found. In terms of our capabilities framework, Rover was no longer a fully capable car company, and in fact had not been for some time. In retrospect, one could criticize the Phoenix directors for portraying the illusion that MG Rover was viable enough to survive, but given their need to secure a partner, this was perhaps the only line that they could take. By 2000 the merger wave that the auto industry had seen throughout the 1990s had subsided, and it became clear that many large-scale mergers such as the one between Daimler and Chrysler were not yielding the hoped-for benefits. In May 2007 the DaimlerChrysler merger was largely unwound, with the sale of 80% of Chrysler to Cerberus Capital Management.

In addition, overcapacity had become a key concern in the industry. As a consequence there was no rationale for any of the established players to buy Rover, who by this time offered little other than some aging models and assembly capacity of average quality in a region with little prospect for growth in sales. The only possibility for Rover was to seek partners in markets that showed real growth, such as China. Chinese manufacturers, while plentiful in number, are short on technology, and all foreign manufacturers that established operations in China have been compelled to set up joint ventures with Chinese companies. Chinese and foreign manufacturers alike are mainly concerned with establishing their position in the Chinese domestic market, so the interest in Rover by Brilliance in 2002 and SAIC in 2004 was geared towards getting access to Rover's technology (which was still marketable in China and other developing regions), and possibly its brands.

The Alchemy vs Phoenix question demonstrates a tension that is repeatedly visible in the history of Rover, and which illustrates the significance of Beer's observation on how the divergence of goals impacts on system viability. Until the reforms in the late 1970s, the union agenda of protecting employment (in the short term) impeded reforms and factory closures that may otherwise have occurred on the basis of purely commercial criteria. It is arguable whether creating a successful car company was ever particularly high on British Aerospace's agenda, given their focus on short-term financial issues. The sale to Phoenix promised fewer job losses in the short-term, but it

was never clear how the company could attain viability, and there was deep hostility to Alchemy's more radical proposal to create a significantly smaller, but possibly longer-lived, business.

As Batchelor (2001) points out, the union's position over redundancy payment liabilities made a deal with Alchemy very difficult. The Alchemy bid, which would have meant downsizing the company to a small-scale niche sports car maker under the MG brand, would nonetheless have been a much more sustainable option. On the other hand this would have meant immediate redundancies at Longbridge of at least 4,500 workers, most likely even more. Under Phoenix, the 9,060 Longbridge workers of the total 32,070 Rover employees all kept their jobs in the first instance (Rover Task Force Report, 2000), although under BMW the workforce had already reduced by 7,000 workers, most of whom took voluntary redundancy (Batchelor, 2001), and again under Phoenix the Rover workforce at Longbridge reduced to 5,100 by 2005. Hence, Phoenix cushioned redundancies from a projected 9,060 in 2000 to 5,100 in 2005. The latter should also be seen in perspective, for as we have seen, the Rover Group was in fact gradually split up from 1984 onwards, and many of these businesses (Jaguar, Land Rover, Mini, Unipart) are still in operation, but under the protective wing of foreign capital. Figure 5 shows that when the output of Jaguar (Ford), Land Rover (Ford) and Mini (BMW) is taken into account, output is about the same as it has been since the late 1970s, at around 400,000 units per annum. These operations are not without their problems, particularly Jaguar, but the fact that they have all continued to exist, and indeed to grow, under alternative owners, supports the idea that the new owners brought capabilities that Rover itself lacked. Even so, the picture has not been one of unqualified success, with Ford putting Jaguar and Land Rover up for sale in June 2007, as part of a restructuring plan.

## **CONCLUSIONS AND IMPLICATIONS**

This data presented in this paper illustrate how Rover's collapse was a culmination of a process that started more than four decades previously: a series of failed attempts at consolidation and rationalisation, a persistent inability to develop products that hit the right markets, and missed opportunities with different partners all led to a situation in which the company eventually consumed its own capital in order to stem its operating losses.

At the outset, this paper set out to explore three questions. The first question concerned how the failure of the company could be understood, and in this respect the company's history carries a number of lessons. First, the company was clearly much more than just a commercial enterprise, and had, at various times in its life, to reconcile the wishes of multiple stakeholders with very different agendas, something which Beer has identified as a threat to system viability. From a commercial point of view in the 1970s reform was delayed because of the politically unpalatable consequences of job losses. In the 1980s, the privatization agenda led to some decisions that did not necessarily make sense from a commercial point of view, including the vetoing of the potential sale of the company to non-British buyers. Even in 2000, considerations of employment protection seem to have outweighed commercial ones.

This lack of focus was aggravated by what might be termed 'the missing development step'. The formation of BLMC, which later became Leyland and then Rover, created an enormous conglomerate from a set of previously relatively small and independent firms. Some of these were in weak and precarious positions well before the merger. In Beer's terms, the conglomerate lacked a management unit of the scale and sophistication to deal with the combination of overall complexity and weaknesses in the operating units. Hence the situation became worse, not better, with the relatively strong firms being pulled down by the weaker ones.

That a large, complex and difficult-to-manage organization was created without an adequate management unit was one part of the problem. However, in the case of Rover, several other factors hit at the same time, putting additional load on already the already over-pressed centre. The company was running out of cash at the time of the merger, and was not generating sufficient funds to resource its own product development; the UK's entry into the Common Market exposed the firm to the full force of foreign competition at a time when it was weak; labour relations issues preoccupied Michael Edwardes who was perhaps the strongest of the firm's CEOs; and so on. Following Ashby (1956), Beer (1984) argues that 'the management unit' must have the capacity to process the inputs that it receives from its own operating units as well as other sources; selective attention is the inevitable consequence of a mismatch in capacity and load. In this paper we have followed Beer in terming this key capability the 'management unit', but this is really a shorthand term for a whole series of capabilities – in financial control, portfolio management, marketing and so on – that

Rover lacked. A capable management system also delivers sufficient consistency over time to permit consistent brand values, something that Rover struggled to do.

In our view, this high-level integration is a generally neglected area by Operations Management as a discipline – Operations Management researchers often focus on very specific processes or subsystems such as manufacturing, product development, supply chain management or technology acquisition and tends to overlook the governance systems that connect all of these subsystems together. This may be because the traditional business disciplines tend to carve up the world in ways that allows detailed, nuanced dissection of particular functions or processes ('subsystems', in the parlance of Beer) to the neglect of issues around how the integration of these subsystems occurs. Operations Management researchers clearly do at times consider issues that span functional areas (e.g. the relationship between manufacturing and product development; the role of suppliers in product development) but holistic analyses of how all the pieces fit together - or fail to - are unusual.

The second question, to what extent do the patterns we find in the Rover case apply to other examples of failure, is more difficult to answer. The Rover case is unusual, in that such a large enterprise was created so quickly from so many weak units. However, we would argue that although it is an extreme case, it demonstrates a number of principles that apply across many situations. These apply particularly to organizations or other systems that are in crisis, where there are failings in several organizational subsystems simultaneously, and where undue load is placed on the management unit. One interpretation of the Rover case is that there was a race between developing the management unit and simplifying the company's operations on the one hand and the rate of decline on the other. In the end, it was the rate of decline that triumphed. The same processes may also be seen in turnarounds, mergers and acquisitions, and other situations in which companies face major shocks.

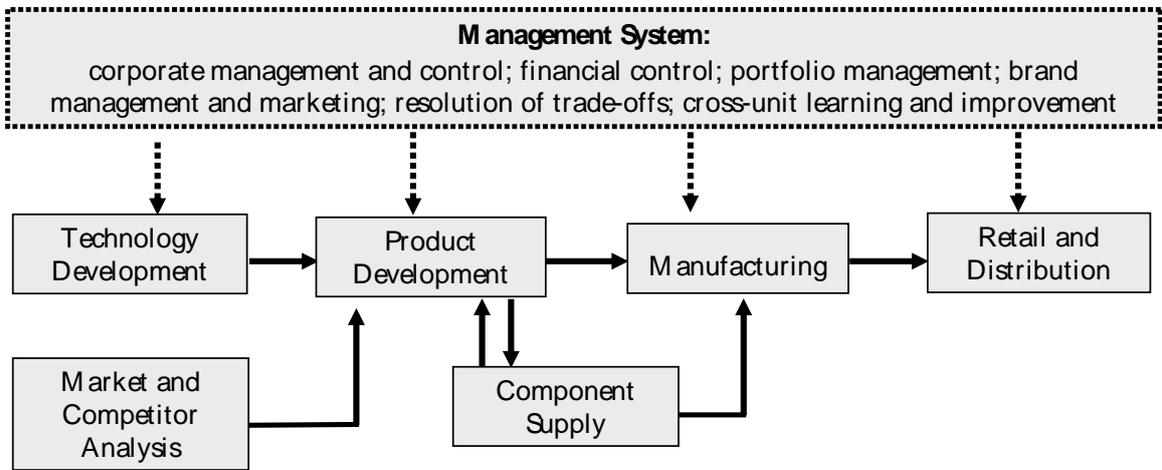
Finally, the Rover case demonstrates the usefulness of systems ideas to understanding at least some types of failure, not as an alternative to capability-based approaches, but in addition to them. Despite being perceived in public as a fully capable car company and commended by commentators on its manufacturing improvements as recently as 1994 (see Pilkington, 1996), in many ways Rover lost the ability to be a fully capable car company well before that. Successive other capabilities were lost over the years, but right up to the end, because the vehicles were still "rolling off the line", many still thought of the company as a 'complete' car company. If

anything, our study shows that judging a firm's competitiveness by defining it as a set of capabilities at the level of subsystems is not sufficient. Analysis of the 'management units' that coordinate these sub-systems can, we argue, offer considerable insight into the reasons behind corporate success and failure.

## REFERENCES

- Aaker, D. (1991) *Managing Brand Equity: Capitalizing on the Value of a Brand Name*. New York: The Free Press.
- Ashby, W.R. (1956) *An Introduction to Cybernetics*, Chapman & Hall, London.
- Batchelor, J. (2001) Employment Security in the Aftermath of the Break-up of the Rover Group, *Warwick Business School Working Paper Series*, No 342.
- Bayley, S. (1986) Marketing Vorsprung durch Technik. In S. Bayley, *Sex, Drink and Fast Cars: The Creation and Consumption of Images*, Chapter 7, pp. 87-112.
- Beer, S. (1972) *The Brain of the Firm - The Managerial Cybernetics of Organization*, John Wiley & Sons, Chichester
- Beer, S. (1979) *The Heart of the Enterprise*, John Wiley and Sons, New York
- Beer, S. (1984) The Viable System Model: Its Provenance, Development, Methodology and Pathology. *The Journal of the Operational Research Society*, Vol 35, no 1, 7-25
- Church, R. (1994) *The Rise and Decline of the British Motor Industry*. Cambridge: Cambridge University Press.
- Clark, K. and Fujimoto, T. (1991) *Product Development Performance: Strategy, Organisation and Management in the World Auto Industry*, Boston, MA, Harvard Business School Press.
- Cusumano, M.A., Takeishi, A. (1991). Supplier Relations and Management: A Survey of Japanese, Japanese-Transplant, and US Auto Plants. *Strategic Management Journal* 12 (8), 563-588
- Delbridge, R. and Oliver, N. (1991) Just-in-time or just the same? Developments in the Auto industry: The retailers views. *International Journal of Retailing and Distribution Management*, Vol 19, No 2, pp 20-26.
- DETR (1998) *Efficient JIT Supply Chain Management: Nissan Motor Manufacturing (UK) Ltd*", *Good Practice Case Study* 374. Department of the Environment, Transport and the Regions, London.
- Dunnett, P. (1980) *The Decline of the British Motor Industry: The Effects of Government Policy, 1945-1979*. London: Croom Helm.
- Ford Motor Company. *Annual reports*, various years.
- Galbraith, J.R. (1974) 'Organizational Design: An Information Processing View'. *Interfaces*, Vol 4, No 3 pp 28-36.
- General Motors Corporation. *Annual Reports*, various years.
- Heller, D.A, Mercer, G. and Fujimoto, T. (2006) The long term value of M&A activity that enhances learning organizations. *International Journal of Automotive Technology and Management*, Vol 6, No 2, pp 157-176.

- Hines, P. (1998) Benchmarking Toyota's Supply Chain: Japan vs UK. *Long Range Planning* 31 (6), 911-918
- Holweg, M. and Pil, F. K. (2004) *The Second Century: Reconnecting Customer and Value Chain through Build-to-Order*. Cambridge, MA, The MIT Press.
- Jackson, M.C. (2001) Critical Systems Thinking and Practice. *European Journal of Operational Research* Vol 128, 233-244.
- Kiff, J. (1997) Supply and Stocking Systems in the UK Car Market. *International Journal of Physical Distribution and Logistics Management*, Vol 27 (3-4), 226-243.
- Lamming, R. (1993) *Beyond Partnership: Strategies for Innovation and Lean Supply*. Prentice Hall: New York.
- Pilkington, A. (1996) *Transforming Rover: Renewal Against the Odds 1981-1994*, Bristol Academic Press.
- Oliver, N. and Delbridge, R. (1991) Beyond customer satisfaction: the changing face of car retailing. *International Journal of Retailing and Distribution Management*, Vol 19, No 3, pp 29-39.
- Reichhart, A., Holweg, M. (2007) Lean distribution: concepts, challenges, conflicts. *International Journal of Production Research* 45 (16), 3699-3722.
- Saul, S.B. (1962) The Motor Industry in Britain to 1914. *Business History*, Vol 5, No 1, pp 22 - 44.
- Sako, M. (1992) *Prices, Quality and Trust*. Cambridge: Cambridge University Press.
- Schonberger, R. (1982) *Japanese Manufacturing Techniques*. New York: The Free Press.
- Schonberger, R. (1986) *World Class Manufacturing*. New York: The Free Press.
- Utterback, J. (1994) *Mastering the Dynamics of Innovation*, Boston: Harvard University Press.
- Whisler, T.R. (1999) *The British Motor Industry, 1945-94: A Case Study in Industrial Decline*. Oxford: Oxford University Press.
- Womack, J.P., Jones D.T. and Roos, D. (1990) *The Machine that Changed the World: The Triumph of Lean Production*. New York: Rawson Macmillan.



**Figure 1: Capabilities Framework**

**Table 1: The seven core capabilities**

<b>Capability</b>	<b>The ability to...</b>
Market and competitor analysis	Identify market trends and competitor actions and feed this intelligence into strategic decisions
Technology development	Acquire, develop and deploy technology
Product development	Develop competitive new products in a timely and cost-effective way
Manufacturing	Match market demand with supply, to competitive cost and quality levels
Component supply	Identify suppliers who can develop competitive sub-systems and components and supply these to the right levels of cost, quality and delivery
Retail and distribution	Establish and operate systems of retail, distribution and aftermarket support in the appropriate markets
Management unit	Allocate and control resources, establish and enforce standards, manage the diversity/uniformity across subsystems (e.g. functions and divisions) and over time

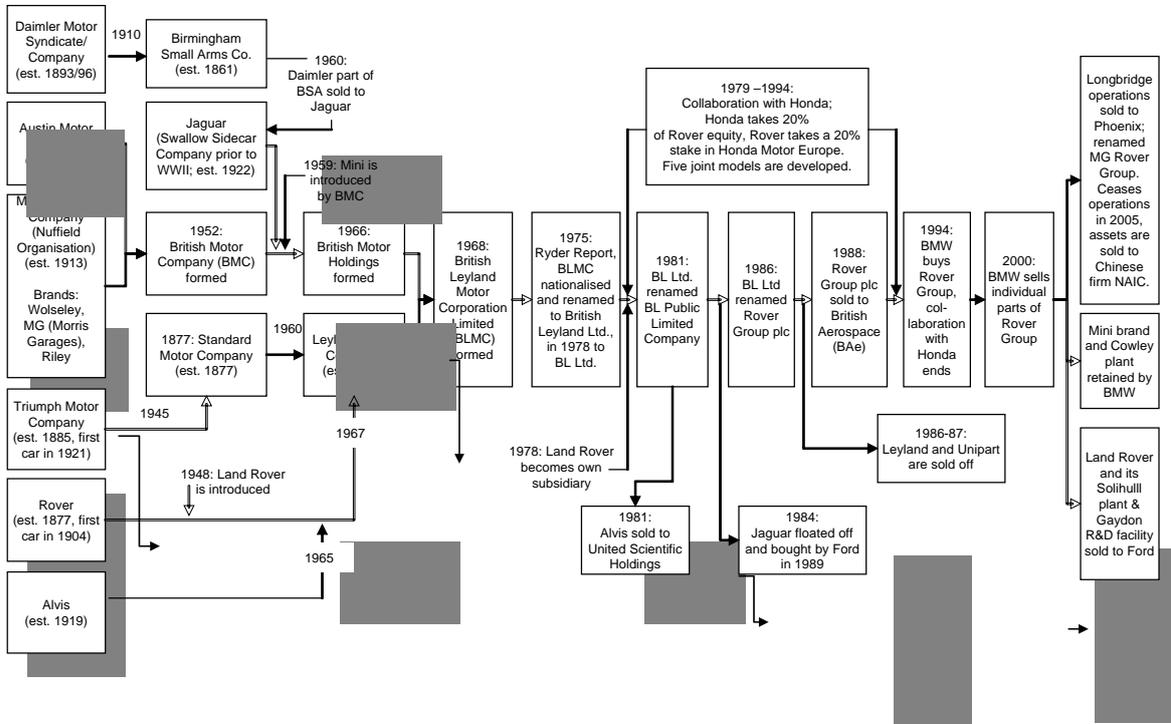
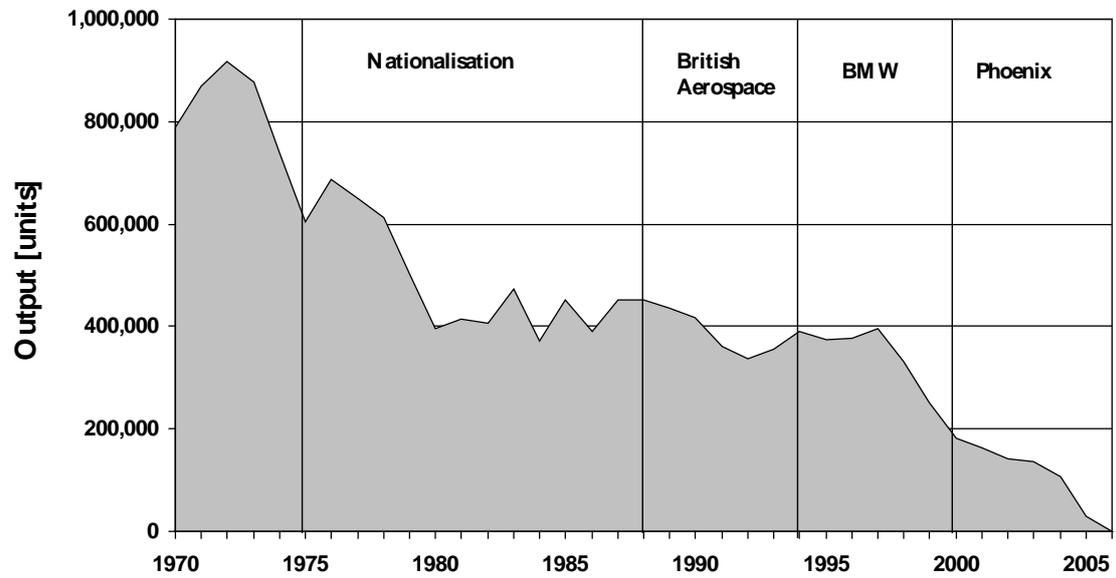
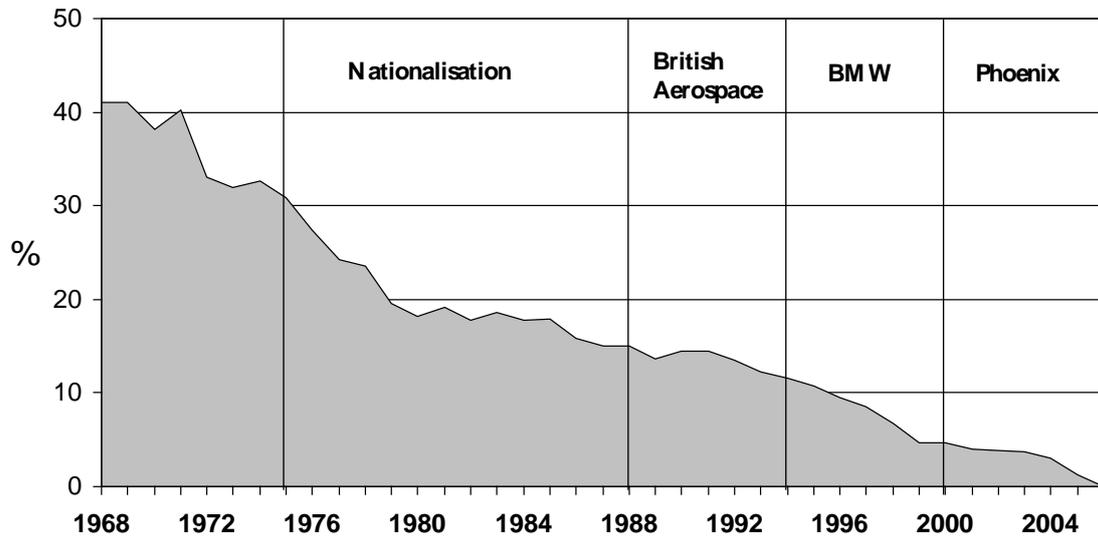


Figure 2: Rover's 'family tree'



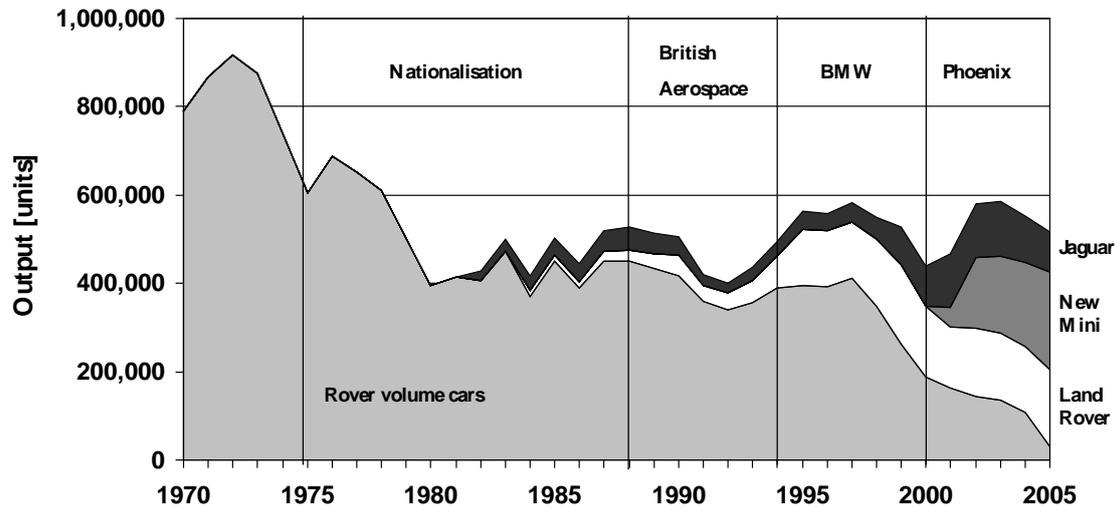
**Figure 3: Car production at BL/Rover, 1970-2005  
(excludes Jaguar, Land Rover and New Mini)**

Source: Company Accounts



**Figure 4: BLMC/Rover's UK market share, 1968-2005**

Source: Company Accounts



**Figure 5: Production of Rovers, Land Rovers and New Minis, 1970-2005**

Source: Company Accounts