

**Building Markets : The Liberalization of the European  
Telecommunications Industry**

by

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**B.A. Woodrow Wilson School  
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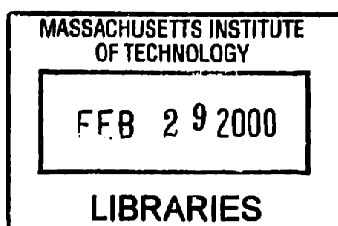
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## **ABSTRACT**

This dissertation examines the process through which distinct national market structures and competitive dynamics could endure in the telecom industry, even as telecom markets were liberalized throughout the Europe Union. The opening of national markets and the international expansion of the telecom operators led many industry observers to predict that a single global market characterized by fierce competition among a few giant firms would emerge beyond the reach of national governments. In the European Union, the initiatives to create a common market for telecommunications posed a further challenge to the national governments' ability to maintain barriers to competition and influence market outcomes in the telecom industry. Finally, the convergence of telecoms, computing and broadcasting stimulated the rapid growth of the internet and a myriad of new on-line services that crossed borders indiscriminately and were very difficult for governments to control.

Calling into question the strong predictions of globalization in the telecom industry, this dissertation explores how differences in national regulation, industrial policy and market shape the development of competition in the national telecom markets of France, Germany and the United Kingdom. In each national context policy makers and firms responded differently to the challenges of market liberalization and technological change. First, within the broad European regulatory framework, the national governments adopted different regulatory regimes to oversee the development of competition and the provision of universal service in the liberalized markets. Second, the national governments introduced distinct industrial policy initiatives and regulations to promote investment and innovation in new internet technologies. Third, the new entrants in the liberalized markets were politically powerful national players with very different core businesses and entry strategies. When the European telecom markets were opened to competition, these diverse policy choices and strategic responses created very different frameworks within which competition would develop and new markets for the internet and on-line services would grow.

Thesis Supervisor : Suzanne Berger

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## INTRODUCTION

On January 1, 1998, the majority of the European telecommunications markets were opened to competition in all networks and services. In the preceding two decades the liberalization of traditionally closed national markets, the privatization of the former state monopolies, the proliferation of global alliances and major technological innovations redefined the competitive landscape in the telecom industry not only in Europe, but around the world. These dramatic changes have raised serious questions about the relevance of national policies and national market structures and generated strong predictions of globalization. While many political, business and academic analyses project a vision of a single global telecom market with fierce competition among four to six giant firms, the reality of the telecom industry today is strikingly different. The new entrants in the liberalized European telecom markets are national players, notably utility companies and industrial conglomerates with national political power, while foreign technical partners have limited their position to minority stakes. Within the European single market framework, the national governments retain a great deal of discretion in the implementation of the European Union (EU) telecom policies. In fact, in each national setting policy makers have used their power to establish different regulatory regimes and pursue distinct technology policies in the telecom industry.

The disparity between the rhetoric and the reality led me to scrutinize the dynamics of the European telecom industry and to try to answer the following questions : Are the observable differences in national telecom policies and patterns of market entry important in the marketplace? Are these differences simply transitional? Or does the

process of market building itself generate diversity? To explore these questions, this dissertation analyzes the development of competition in the national telecom markets of France, Germany and the United Kingdom. In a series of case studies, my research examines the impact of national regulation, industrial policy and market entry on competition in voice services and investments in new internet technologies in each national market.

### ***Globalization and the decline of the nation state***

According to contemporary theorists and publicists of globalization, we are witnessing the emergence of an integrated global economy in which national economic structures are increasingly irrelevant.<sup>1</sup> Like foreign exchange markets where transactions worth billions of dollars take place in seconds over worldwide networks, the global economy is conceived of as a single unit functioning as if in one place in real time. One of the central claims of the literature on globalization is that the magnitude of the international flows of investment, goods and services and the rise of multinational corporations have stripped national governments of their power to manage economic activity. As Ohmae wrote in *The Borderless World*, the global inter-linked economy is “becoming so powerful that it has swallowed most consumers and corporations, made traditional national borders disappear and pushed bureaucrats, politicians and the military toward the position of declining industries.”<sup>2</sup> In a global economy, the primary actors are thought to be transnational firms and economic outcomes are determined by free market competition, not governments. For example in *The Retreat of the State* Susan Strange

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<sup>1</sup> See for example, Ohmae, Kenichi. 1990. *The Borderless World*. New York: Harper Collins.; Ohmae, Kenichi. 1995. *The End of the Nation State*. New York: Free Press.; Strange, Susan. 1986. *Casino Capitalism*. Oxford: Basil Blackwell.; Reich, Robert B. 1991. *The Work of Nations : Preparing Ourselves*



argues that, “The impersonal forces of world markets are now more powerful than states to whom political authority over society is supposed to belong. Where states were once the masters of markets, now it is markets, which on many crucial issues, are the masters over the governments of states.”<sup>3</sup>

In the late 1990s these theories of globalization and the many epitaphs of the nation state lost some of their luster. First, authors such as Hirst and Thompson challenged the assertion that the economic openness of the late twentieth century is unprecedented and that national economies are in fact as integrated as the proponents of globalization claim.<sup>4</sup> Looking closely at international trade and foreign direct investment, Hirst and Thompson argue that genuinely transnational firms are very rare and that capital mobility remains limited particularly between developed and developing countries. In addition, new research attested to the enduring importance of the welfare state and cast serious doubts on the claims that the internationalization of economic activities has diminished the power of national governments. For example, both Rodrik and Garrett’s work demonstrates that national governments continue to play an important role in providing social insurance and mitigating the dislocations globalization produces.<sup>5</sup> Although these analyses provide a strong critique of globalization and the decline of national governments, they focus on areas where states have traditionally played an important role and where the need for public policy is understandable.

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*for 21st-Century Capitalism*. New York: Alfred A. Knopf. Dunning, John H. 1993. *The Globalization of Business*. New York: Routledge.

<sup>2</sup> Ohmae, Kenichi. 1990. *The Borderless World*. New York: Harper Collins. : xi.

<sup>3</sup> Strange, Susan. 1996. *The Retreat of the State : The diffusion of power in the world economy*. Cambridge: Cambridge University Press.

<sup>4</sup> Hirst, Paul, and Grahame Thompson. 1996. *Globalization in Question*. Cambridge, UK: Polity Press.

<sup>5</sup> Rodrik, Dani. 1997. *Has globalization gone too far?* Washington, DC: Institute for International Economics., Garrett, Geoffrey. 1998. *Global Markets and National Politics: Collision Course or Virtuous*

### ***Building Markets***

This dissertation goes to the heart of the contemporary visions of globalization by examining how national actors and national policy decisions shape the development of telecom markets. First, while globalization is often conceived of as a market led process, my research contributes to the on-going debate over convergence and diversity by examining the degree to which markets themselves reflect national diversity. Challenging the notion that politics is merely a lag factor, my work explores how competitive markets do not emerge spontaneously, but rather are shaped by national actors and national policy choices. This is an area that has received surprisingly little attention in the political economy literature. Turning to economic and management theory, the work of both Hayek and Porter highlights the limitations of market analyses based on the notion of perfect competition and helps us to consider the process through which markets are built.<sup>6</sup> When the European telecom markets were opened to competition, the distinct national policy decisions and entry strategies created very different frameworks within which competition would develop and new markets for the internet and on-line services would grow. My research shows that the national regulatory regimes, internet policies and the patterns of market entry all had important effects on the intensity of competition, the type of competition and investments in new technologies in the liberalized markets.

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Circle? *International Organization* (Autumn).; even the liberal Economist wrote two special sections on "The myth of the powerless state" 7 October 1995 and "The visible hand" 20 September 1997.

<sup>6</sup> Porter, Michael. 1990. *The Competitive Advantage of Nations*. New York: Free Press.

***Dynamic change and persistent diversity in the telecom industry***

Second, telecommunications is an industry in which the predictions of globalization are particularly strong and the capacity for state intervention appears to be limited at best. The opening of national markets and the international expansion of telecom operators have led many industry observers to predict the emergence of a single global market characterized by fierce competition among a few giant firms beyond the reach of national governments. In the European Union, the initiatives to create a common market for telecommunications pose a further challenge to the national governments' ability to maintain barriers to competition and influence market outcomes in the telecom industry. Finally, the convergence of telecoms, computing and broadcasting stimulated the rapid growth of the internet and a myriad of new on-line services that cross borders indiscriminately and are very difficult for governments to control. Although theories of convergence through technological imperatives were largely undermined by research such as Dore's *British Factory-Japanese Factory*, much of the discourse on the internet in the popular press and in academic circles, is characterized by technological determinism.<sup>7</sup> The visions of a network society and an electronic marketplace found in the growing literature on the "information revolution" suggest that the internet imposes an open market model of competition that is both global and free from government intervention.<sup>8</sup> In fact, like market mechanisms, information and communication technologies are widely considered to be primary drivers of globalization. As Castells wrote in *The Rise of the Network Society*, "While the capitalist mode of production is characterized by its relentless expansion, always trying to

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<sup>7</sup> Dore, Ronald. 1973. *British Factory - Japanese Factory*. Berkley: University of California Press.

overcome limits of time and space, it is only in the late twentieth century that the world economy has been able to become a truly global economy on the basis of the new infrastructure provided by information and communication technologies"<sup>9</sup>

Calling into question the strong predictions of globalization in the telecom industry, this dissertation examines the process through which distinct national market structures and competitive dynamics can endure, even as growing international competition and technological change transform the competitive landscape. My research builds on work such as Berger and Dore's *National Diversity and Global Capitalism* which reexamines the capacity for distinct national traditions to reproduce over time.<sup>10</sup> Recalling the debates over the "industrial society," these scholars help us to understand how national traditions can generate responses to changes in the international political economy and technological advances that are not simply functional equivalents, but rather distinct solutions with very different winners and losers. In the existing literature on the European telecom industry, Cohen, Ziegler and Salomon provide valuable insights into how national factors such as the traditional approach to industrial modernization and the structure of elites have shaped innovation and the development of the national telecom industries.<sup>11</sup> However, these analyses focus primarily on the old monopoly

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<sup>8</sup> See for example, Castells, Manuel. 1996. *The Rise of the Network Society*. Malden, MA: Blackwell.; Dertouzos, Michael. 1997. *What will be*. New York: Harper Collins.

<sup>9</sup> Castells, Manuel. 1996. *The Rise of the Network Society*. Malden, MA: Blackwell. : 93.

<sup>10</sup> Berger, Suzanne, and Ronald Dore, eds. 1996. *National Diversity and Global Capitalism*. Ithaca, New York: Cornell University Press. Cohen, Elie. 1996. *La Tentation Hexagonale*. Paris: Fayard.

<sup>11</sup> Cohen, Elie. 1992. *Le Colbertisme "High Tech": Economie des Télécom et du Grand Projet*. Paris: Hachette.; Ziegler, J. Nicholas. 1997. *Governing Ideas : Strategies for Innovation in France and Germany*. Ithaca: Cornell University Press.; Salomon, Jean-Jacques. 1986. *Le Gaulois, le Cow-boy et le Samouraï: La Politique Française de la Technologie*. Paris: Economica.; Cawson, Alan, Kevin Morgan, Douglas Webber, Peter Holmes, and Anne Stevens. 1990. *Hostile Brothers : Competition and Closure in the European Electronics Industry*. Oxford: Clarendon Press.; Werle, Raymund. 1990. *Telekommunikation in der Bundesrepublik : Expansion, Differenzierung Transformation*. Frankfurt: Campus Verlag.; Thatcher, Mark. 1994. Regulatory Reform in Britain and France : organizational structure and the extension of competition. *Journal of European Public Policy* 1 (31):441-464.

regimes and do not examine whether these same factors continue to influence the telecom industry in a competitive environment. Similarly, Vogel and Grande argue that liberalization leads to *reregulation*, but their work does not directly address the questions of whether national governments can maintain different regulatory regimes and whether national regulation even matters in a competitive market.<sup>12</sup> My research focuses on these questions and examines the mechanisms through which significant national differences persist in the liberalized telecom markets.

The case studies show how national policy makers and firms responded in distinct ways to the challenges of market liberalization and technological change and how differences in the national regulations, internet policies and entry strategies had a significant impact on the development of the liberalized markets. First, the national governments used their authority to establish distinct regulatory frameworks to govern the development of competition and ensure the provision of universal service. Second, the national governments pursued different industrial policy initiatives to promote investment and innovation in internet technologies and boost the competitiveness of national firms. Third, the primary line of business and entry strategy of the firms preparing to compete with the former PTO in the liberalized markets varied across countries from utility companies to media firms to foreign cable operators. In the competitive markets, these diverse policy choices and strategic responses created very different market structures and competitive dynamics. The case of the UK with nearly fifteen years of experience with competition and market regulation suggests that these

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<sup>12</sup> Vogel, Steven K. 1996. *Freer Markets, More Rules*. Ithaca: Cornell University Press.; Grande, Edgar. 1994. The New Role of the State in Telecommunications. *West European Politics* (July).

same variables continue to shape the development of competition over the medium to long terms.

### ***Outline***

Chapter 2 examines the enormous changes that have transformed the telecommunications industry in Europe and around the world in the 1990s and raised serious questions about the relevance of national governments and national borders. Liberalization, internationalization and technological change broke down the traditional means of state control over the telecom industry and introduced powerful private actors into the national markets. These closely intertwined and mutually reinforcing changes pose a significant challenge to national policy makers as they struggle to regulate competition and promote investment in new technologies within their national borders. Chapter 3 shows how the European initiatives to create a single open market for telecommunications further constrain national government's ability to influence the development of competition in the national telecom markets.

The next three chapters are devoted to the case studies of the national telecom markets in France, Germany and the UK. The case studies each examine the political process leading up to the liberalization of the national telecom markets and the privatization of the public operator. The cases then provide a detailed analysis of the national regulatory framework, internet policies and market entry and their competitive implications. Chapter 7 then compares the major findings in the case studies and analyzes how the national variations in policies and entry strategies effect the development of competition and investments in new internet technologies in the liberalized markets. This chapter also examines what actually happened in the national

markets in 1998 after the majority of the European Union telecom markets opened to competition in network and services. The concluding chapter explores future areas of research and considers the broader implications of the persistence of distinct national market structures and competitive dynamics in the national telecom markets.

# **PART I : THE CHANGING COMPETITIVE LANDSCAPE : CHALLENGES TO THE AUTHORITY OF NATIONAL GOVERNMENTS**

## **CHAPTER 2**

### **REVOLUTIONARY CHANGE: Liberalization, Internationalization and Technological Innovation**

In the past two decades, liberalization, internationalization and technological innovation have transformed the telecom industry in Europe and around the world. Since the early 1980s, telecommunications underwent a dramatic change from an industry of protected national monopolies closely controlled by the state to a dynamic, highly competitive industry. Governments from across the political spectrum in both advanced industrial nations and developing countries opened their national telecom markets to competition and privatized their public telecom operators. The incumbent operators invested in foreign markets and entered into a series of frequently changing international alliances while a new generation of carriers pursued global strategies and invested heavily in their own international, high-capacity networks. Advances in transmission technologies and the data driven shift to a network architecture based on internet protocols reduced the cost of infrastructure installation and facilitated market entry. The convergence of telecommunications, broadcasting and computing has led to the explosive growth of the internet and new on-line services. As the competitive environment changed, the market for telecom services maintained a high annual growth rate of 7% in the OECD during the 1990s, reaching US\$623 billion in 1997.<sup>1</sup> In Europe growth was

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<sup>1</sup> OECD. 1999. *Communications Outlook 1999*. Paris: OECD.



expected to continue at a rate of 8-9% for the next ten years led by the rapid expansion of the markets for mobile and data communications.

While the economic importance of telecoms increased, the revolutionary changes in the industry raised serious questions about the continued relevance of national governments and national borders. Liberalization, internationalization and technological change broke down the traditional means of state control over the telecom industry and introduced powerful private actors into the national markets. Together these changes challenged the ability of government policy to maintain barriers to competition and influence market outcomes such as prices and investments in new technologies. Indeed, market opening, the growth of MNEs and new technologies have redefined the competitive landscape and led many industry observers to predict that a single highly competitive global market dominated by a few giant firms is emerging beyond the reach of national governments. As Susan Strange wrote:

The power of governments, which for social policy reasons, might want to keep rural areas and lonely old people fully integrated into the communications system at minimum cost has clearly diminished. So has the control of governments. By means of their ownership of state monopolies PTTs used to have control over the design and availability of such communications. No longer. The prospect in the mid-1990s is for a mere handful of global corporations to take the place of many mostly publicly owned national operators, and to dominate the business world-wide. Governments everywhere are being forced, willy-nilly to bargain with these transnational operating firms over the terms on which national systems are incorporated into the global network and the ways in which they develop.<sup>2</sup>

This chapter will provide evidence of the magnitude of the changes in the telecom industry and discuss the significant challenge that liberalization, internationalization and technological change pose to national governments and national borders.

### ***The Traditional Model***

For nearly a century, the traditional western European Post, Telephone and Telegraph authorities (PTT) held legal monopolies over the provision of telecom infrastructure, services and terminal equipment within their national borders. Telecommunications was widely considered to be a natural monopoly due to high network and organizational economies of scale.<sup>3</sup> To avoid the potential abuses of a private monopoly, nearly all of the European PTTs were public administrations or state-owned enterprises. State ownership of the national telecom infrastructure also reflected national security concerns and a public commitment to providing universal service.<sup>4</sup>

The public telecom monopolists were heavy, bureaucratic organizations which focused on providing a public service to subscribers rather than catering to the needs of customers.<sup>5</sup> Their approach to innovation tended to be very technology driven with little attention given to either consumer demand or costs.<sup>6</sup> Pricing and investment decisions were not driven by costs, but rather by political objectives such as ensuring distributional equity, promoting regional development and supporting the national telecom equipment industry. For example, very high national and international long distance rates subsidized

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<sup>2</sup> Strange, Susan. 1996. *The Retreat of the State : The diffusion of power in the world economy*. Cambridge: Cambridge University Press.

<sup>3</sup> Evans, David S., and James J. Heckman. 1983. Natural Monopoly. In *Breaking Up Bell : Essays on Industrial Organization and Regulation*, edited by D. S. Evans. New York: North-Holland.; Kahn, Alfred. 1970. *The Economics of Regulation : Principles and Institutions*. 2 vols. New York: Wiley.

<sup>4</sup> For histories of the PTT model and discussions of the rationale for state ownership of the European PTTs see Noam, Eli. 1992. *Telecommunications in Europe*. Oxford: Oxford University Press.; Bertho, Catherine. 1982. *Télégraphes et téléphones*. Paris: Livre de Poche.; Grande, Edgar. 1989. *Vom Monopol zum Wettbewerb? Die neokonservative Reform der Telekommunikation in Großbritannien und der Bundesrepublik Deutschland*. Wiesbaden: Deutscher Universitäts Verlag. On state ownership see also Duch, Raymond. 1991. *Privatizing the Economy: Telecommunications Policy in Comparative Perspective*. Ann Arbor: University of Michigan Press.

<sup>5</sup> See for example, Darbishire, Owen. 1995. Switching Systems: Technological Change, Competition and Privatization. *Industrielle Beziehungen* 2..

low local rates and monthly subscription fees in most European countries. This politically motivated cross subsidization favored average residential users at the expense of large business users who accounted for the vast majority of long distance traffic. Many of the public telecom operators also subsidized the national postal service and were forced to make large contributions to the national budget.<sup>7</sup>

With the exception of a few international operators such as the American ITT and Britain's Cable & Wireless, the public telecom operators confined their activities almost exclusively to their protected domestic markets. Some of the state owned operators, such as Deutsche Telekom were also subject to strict legal restrictions on their international activities. The PTTs' international business consisted primarily of negotiating the bilateral accords that governed the completion of cross border calls and calculating the international settlement fees paid to foreign operators.<sup>8</sup> Most of the European governments maintained strong legal barriers to foreign investment in the national telecom industry.<sup>9</sup> The states also adopted divergent technical standards to protect the national equipment manufacturers and maintain the significant formal or de facto vertical integration between the PTTs and their suppliers.

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<sup>6</sup> For a discussion of the PTOs' approach to technology and supplier relations see Cawson, Alan, Kevin Morgan, Douglas Webber, Peter Holmes, and Anne Stevens. 1990. *Hostile Brothers : Competition and Closure in the European Electronics Industry*. Oxford: Clarendon Press.

<sup>7</sup> More detailed information is provided in the case studies in Chapters 4 through 6.

<sup>8</sup> Bringing together the national PTOs, the International Telecommunications Union (ITU) traditionally coordinated the international account settlement systems and established rules and standards to ensure the completion of international calls.

<sup>9</sup> Legal and structural barriers to entry are detailed in the OECD's bi-annual *Communications Outlook* and in the US Trade Representative's *National Trade Estimate Report on Foreign Trade Barriers*.

**LIBERALIZATION**  
***From state to market : Dismantling the national monopolies***

The message is deregulate. You cannot stop human progress. If the Catholic church couldn't stop Galileo, then governments won't be able to stop things now.

-- Carlo De Benedetti, Chairman of Olivetti<sup>10</sup>

Since the divestiture of AT&T in the early 1980s, liberalization and privatization broke down the traditional model of sectoral organization in the telecom industry throughout western Europe and around the world. Marking the culmination of this process, in 1998 most of the European Union member states fully liberalized their markets and the WTO agreement on telecommunications came into effect committing 69 countries to open 90% of the world telecom market to competition and foreign investment. Liberalization ended the legal monopolies over telecom services, networks and equipment and opened the national markets to competition. In most cases liberalization was accompanied by privatization which denotes the partial or full sale of the national public telecom operator.<sup>11</sup> Liberalization eliminated the traditional mechanisms of state control over the telecom market and transferred pricing and investment decisions to firms operating in a competitive market. Privatization also freed the former PTTs from weighty political obligations and allowed the telecom operators to respond to market signals.<sup>12</sup>

The long standing national telecom monopolies first began to fall in the early 1980s when three of the largest telecom markets in the world opened to competition. In 1982 US Circuit Court Judge Green's landmark decision known as the Modification of

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<sup>10</sup> Emma Tucker, "Streets resound with superhighway buzzwords," *Financial Times* 25/26 February 1995.

<sup>11</sup> Privatization and liberalization reflected the same neo-liberal ideas about limiting state intervention in the economy; however, these two reforms are distinct and do not necessarily have to be combined. It is possible to have a private monopolist as AT&T was for many years. Moreover, a publicly owned company can compete in a liberalized market. For example, the BBC is a public broadcaster which competes in the open British television market. For further discussion see Duch, Raymond. 1991. *Privatizing the Economy: Telecommunications Policy in Comparative Perspective*. Ann Arbor: University of Michigan Press..

the Final Judgement (MFJ) led to the divestiture of AT&T and opened the way for competition to develop in the US long-distance telecom market.<sup>13</sup> Shortly thereafter, Margaret Thatcher's conservative government licensed Mercury Communications to compete with British Telecom in the provision of telecom infrastructure and services. Thatcher's government also became the first to privatize its public telecom operator, selling 51% of British Telecom for £3.4 billion in 1984.<sup>14</sup> At the same time, the Japanese government licensed a limited number of private network operators to compete with NTT and allowed much broader competition in services.<sup>15</sup>

The introduction of competition into these three markets represented a dramatic departure from the traditional model of sectoral organization and the conventional understanding of telecoms as a natural monopoly.<sup>16</sup> While the debates and the leading actors differed in each national arena, liberalization responded primarily to a combination of technological innovation, increased domestic demands for reform and liberal economic ideas. First, advances in transmission and switching technologies reduced the cost of market entry significantly and challenged the accepted view that telecommunications was a natural monopoly. Microwave technology and fiber optic cable lowered the expense of network installation and operation, while modern electronic switching made it easier for

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<sup>12</sup> Vickers, John, and George Yarrow. 1988. *Privatization: An Economic Analysis*. Cambridge: MIT Press.

<sup>13</sup> In 1984 AT&T was divided into AT&T which was a long distance carrier and equipment manufacturer and seven independent Regional Bell Operating Companies (RBOCs) which provided local telecom services and mobile communications. For a history and analysis of the divestiture of AT&T and the development of competition in the US long-distance market See Crandall, Robert W. 1991. *After the Breakup*. Washington, DC: Brookings Institute.; Evans, David S., ed. 1983. *Breaking Up Bell : Essays on Industrial Organization and Regulation*. New York: North-Holland.

<sup>14</sup> Chapter 6 provides greater detail on the liberalization of the UK telecom market. See also Vogel, Steven K. 1996. *Freer Markets, More Rules*. Ithaca: Cornell University Press..

<sup>15</sup> For a comparative study of liberalization in these three markets see Hills, Jill. 1986. *Deregulating Telecoms: Competition and Control in the United States, Japan and Britain*. Westport, Connecticut: Quorum Books.

customers to choose among competing long-distance suppliers.<sup>17</sup> Second, national governments faced growing pressure to reform the existing monopoly regime from business users who complained about high prices and lagging innovation and from firms, such as MCI which wanted to enter the lucrative telecom market. These demands for change found support in the newly elected conservative governments of Margaret Thatcher and Ronald Reagan. Committed to free market competition and limited government intervention in the economy, both Thatcher and Reagan's governments believed that telecom liberalization would increase the competitiveness of the national telecom industry and provide consumers with greater value and more choice.

The liberalization of these three major markets led to a serious review of the telecom monopolies in other advanced industrial nationals. While national decision makers debated the need for reform, the US government and American telecom operators started to pressure their trading partners for reciprocal market opening. Within a few years, New Zealand, Australia, Canada, Sweden and Finland all followed the example of the US and the UK and introduced competition in telecom networks and services. As discussed in the next chapter and the case studies, liberalization progressed more slowly in continental Europe. Efforts to reform the entrenched national telecom monopolies faced strong opposition from unions and their political supporters who feared that liberalization would lead to massive job losses. After years of fierce debates and difficult negotiations at the national and European levels, domestic interests gradually shifted in favor of liberalization and privatization. In 1994 the EU member states unanimously

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<sup>16</sup> See Bradley, Stephen P., and Jerry A. Hausman, eds. 1989. *Future Competition in Telecommunications*. Boston: Harvard Business School Press.; Evans, David S., ed. 1983. *Breaking Up Bell : Essays on Industrial Organization and Regulation*. New York: North-Holland.

agreed to open their national telecom markets to competition in all services and infrastructure by January 1, 1998. In the next few years, nearly all of the Western European states at least partially privatized the national PTO.

<i>Operator</i>	<i>Date</i>	<i>Stake Sold %</i>	<i>Issue Value \$ bn</i>	<i>Remaining State Stake %</i>
Deutsche Telekom	1996	26	13.0	74
Telefónica de España	1997	21	4.0	zero
France Télécom	1997	25	6.7	75
Portugal Telecom	1997	18	1.5	37
Telecom Italia	1997	45	9.7	zero

Telecom liberalization and privatization extended beyond the advanced industrial nations to many emerging markets, notably in Latin America.<sup>18</sup> In 1997 the Group on Basic Telecommunications organized under the auspices of the World Trade Organization (WTO) reached an agreement to liberalize 90% of world telecom market.<sup>19</sup> After nearly ten years of negotiations, 69 countries agreed to legally binding schedules to open some or all of their national telecom markets to competition and to remove restrictions on foreign investment in the national telecom industry. Although this agreement received criticism for formalizing existing commitments rather than extending liberalization, the agreement and the WTO's enforcement mechanisms made it much more difficult for the signatories to renege their pledges to introduce competition into their national telecom markets.<sup>20</sup> For many industry observers, the WTO agreement was a symbol of the transformation of the telecommunications from an industry of protected national monopolies to an open, international or even global industry. As the Secretary-

<sup>17</sup> Huber, Peter. 1989. The Technological Imperative for Competition. In *Future Competition in Telecommunications*, edited by S. P. Bradley and J. A. Hausman. Boston: Harvard Business School Press.

<sup>18</sup> International Telecommunication Union. 1998. World Telecommunication Development Report. Geneva: ITU.

<sup>19</sup> World Trade Organization. 1996. Forth Protocol to the General Agreement on Trade and Services : Agreement on Basic Telecommunications. Geneve.

General of the ITU declared, "For the telecommunication industry, the forces of globalization are encapsulated in the WTO agreement which represents an acknowledgement that national boundaries are becoming increasingly meaningless when it comes to telecommunications provision."<sup>21</sup>

### ***Economic and technological challenges to national governments***

Behind the policies of liberalization and privatization adopted by national governments around the world lay very fundamental shifts in technology and in the economics of the telecom industry. Technological by-passes, commoditization and the high costs of closure not only undermined the traditional monopolies, but also challenged the ability of governments to maintain regulatory barriers to competition in the liberalized markets.<sup>22</sup>

### ***Technological by-passes***

Technological advances allowed foreign competitors to by-pass national monopolies and restrictive national regulations by entering a market without a physical presence.<sup>23</sup> For example, call back service operators used computer technology to undercut the national monopolists' high international rates by rerouting calls so that they were billed in a country such as the US or the UK where international call charges were low. Call back services offered discounts of more than 70% and by 1996 they accounted

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<sup>20</sup> Drake, William J., and Eli M. Noam. 1997. The WTO deal on basic telecommunications : Big bang or little whimper? *Telecommunications Policy* 21 (9/10).

<sup>21</sup> Tarjanne, Pekka. 1999. Preparing for the next revolution in telecommunications: implementing the WTO agreement. *Telecommunications Policy* 23 (February).

<sup>22</sup> As discussed further below, scholars such as Vogel and Grande argue that liberalization leads to a process of reregulation; however, as national governments reregulate technological by-passes, intense competition and the high cost of closure limit policy makers' ability to use regulation to protect the national market and impede entry. Vogel, Steven K. 1996. *Freer Markets, More Rules*. Ithaca: Cornell University Press. ; Grande, Edgar. 1994. The New Role of the State in Telecommunications. *West European Politics* (July).



for 9% of the US international traffic.<sup>24</sup> Because they had no physical presence in the countries where they offered service, call back operators were very difficult for governments to control. For example, attempts to ban resale in Hong Kong proved almost impossible to enforce. Since the cost of setting up a call back service was extremely low, as soon as the government stopped one operator from providing service in Hong Kong another would enter the market. To give another example of technological by-pass, wireless operators in Denmark offered German residents inexpensive roaming services that cost less than the local rates offered in Germany. Deutsche Telekom tried to prevent this circuitous entry into the domestic market, but could not stop German consumers from subscribing to a mobile phone service in Denmark and using it in Germany.<sup>25</sup> On the not too distant horizon, improvements in internet telephony and satellite phone systems will also allow operators to provide telecom service anywhere in the world irrespective of the national regulatory regime.<sup>26</sup> Indeed, as technology facilitates entry without a physical presence, governments find it increasingly difficult to control the flow of telecom services across their national borders.

### ***Intense competition***

Once new competitors began to enter a national market, the proliferation of players and the growth of new technologies encouraged the development of very intense price based competition. Advances in network technologies reduced the cost of market entry and provided many alternative technological platform from which to compete.

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<sup>23</sup> Interviews, London and MIT. See also Huber, Peter. 1989. *The Technological Imperative for Competition*. In *Future Competition in Telecommunications*, edited by S. P. Bradley and J. A. Hausman. Boston: Harvard Business School Press..

<sup>24</sup> "Call-back boosts market" *Financial Times* 17 November 1997.

<sup>25</sup> Interviews, Germany and MIT.

<sup>26</sup> Government regulators cannot prevent consumers from logging on to the internet and using a \$300 piece of equipment to transmit a voice call. At present, quality is the chief limitation on internet telephony.

Instead of one vertically integrated, facilities based operator, telecom services were provided by a host of new competitors ranging from carriers with their own low cost, high capacity networks such as WorldCom to resellers and internet service providers which relied on lease lines. In the local loop, wireless operators and cable companies provided low cost alternatives to the incumbents' public switched telephone networks. By the late 1990s several operators started to invest in new packet switched networks based on internet protocols (IP). Industry experts predict that IP technology could cut an operators' cost base by as much as 80-90% and make the public switched telecom networks obsolete.<sup>27</sup>

The proliferation of players and diversity of technologies encouraged the development of intense competition for several reasons.<sup>28</sup> First, the sum of the competitors' market share ambitions usually exceeded 100%. For example, when the German market opened to competition in basic voice services, the major competitors' stated market share objectives exceeded 120%. As operators fought for a larger pie actually existed, a price war quickly developed in the German long distance market. Second, new competitors such as o.tel.o in Germany and McCaw in the US based their entry strategy on gaining customers and market share rather than making profits. As a result, these firms offered very low prices and were prepared to incur considerable losses for several years. In its first year competing in the liberalized German market for public voice service, o.tel.o lost more than DM 2 billion and did not expect to achieve profitability before 2001. Finally, many of the new entrants invested heavily in

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<sup>27</sup> According to Gemini Consultants the cost of sending 650 megabytes from New York to London is \$1.98 using an internet protocol network as opposed to \$27.08 on the public switched telephone network. Neil McCartney "Sector enjoys its most successful year yet" FT Telecoms 18 March 1999.

infrastructure ahead of growth thereby creating significant excess capacity. In Germany, the new entrants started to build three national fixed line networks and several small city networks to compete with Telekom's existing public switched telecom network (PSTN). According to some estimates, high speed telecom capacity in the US will increase 500 fold between 1997 and 2002.<sup>29</sup> This trend was amplified by advances in fiber optics and IP technologies which led to exponential increases in capacity. For example, one pair of fiber optic cables could transport all of the long distance traffic in North America. Over capacity increased the pressure on prices and pushed the operators to compete aggressively for new customers in order to achieve the economies of scale that would reduce unit costs and make their exceedingly low prices sustainable. In the German market these competitive dynamics contributed to a 30% fall in Deutsche Telekom's long distance market share and prices decreases of as much as 70%. Analyses of the mobile market and the airline industry suggest that this price based competition intensifies with time and creates a type of competition known as commoditization.<sup>30</sup> This powerful competitive dynamic raises serious questions about ability of national governments to control entry or pricing using traditional regulatory policy tools.<sup>31</sup> For example, a change in the German interconnection regime to restrict resale might not curb the fall in retail prices since significant over capacity also creates considerable pressure for prices to remain low. Similarly, with wireless, cable and satellite technologies providing direct

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<sup>28</sup> Weil, Henry Birdseye. 1996. *Commoditization of Technology-Based Products and Services: A Generic Model of Market Dynamics*. Cambridge: MIT Sloan School of Management. "Dial R for risk" The Economist 4 June 1994.

<sup>29</sup> Alan Cane, "Clearer than the Bells" Financial Times 19 May 1999.

<sup>30</sup> Weil, Henry Birdseye. 1996. *Commoditization of Technology-Based Products and Services: A Generic Model of Market Dynamics*. Cambridge: MIT Sloan School of Management.

<sup>31</sup> Interviews, London and Germany 1997.

access to customers, it becomes very difficult for the government to protect the incumbent's dominant position in the local loop.

### ***The high cost of closure***

Policy makers and political economists both argue persuasively that even if governments could impede entry and limit competition in their national markets, the economic costs of maintaining a closed telecom market would be prohibitively high.<sup>32</sup> First, static efficiency costs result from the high prices and slow growth in a protected market. An analysis conducted by the OECD shows that retail prices for business and residential users were considerably higher in countries where the government did not liberalize the telecom industry than in competitive markets. Moreover, the OECD found that price differentials between competitive and non-competitive markets increased over time.<sup>33</sup> To give an example, in 1998 the annual cost of leasing a 45Mbits end to end circuit on the highly competitive London-New York route was about the same as that for a 8Mbits half circuit from Spain to an adjacent EU country. The experience of both the US and the UK market also indicate that competition lowers prices and stimulates market

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<sup>32</sup> Frieden and Rogowski argue that in an industry such as telecoms where technology advances and the liberalization of major markets increase the ease of doing business across national borders, closure incurs increasingly high static and dynamic costs. Frieden, Jeffrey A., and Ronald Rogowski. 1996. *The Impact of the International Economy on National Policies: An Analytical Overview*. In *Internationalization and Domestic Politics*, edited by H. V. Milner and R. O. Keohane. Cambridge: Cambridge University Press. This argument is made about the telecom industry by Bar, François, and Michael Borrus. 1997. *Why Competition Is Necessary in Telecommunications and How to Achieve It: The Experience of Advanced Economies*. Berkeley: Berkeley Roundtable on the International Economy., Alfred Sikes in Sapolsky, Harvey S., and et al, eds. 1992. *The Telecommunications Revolution*. New York: Routledge.; Commission of the European Communities. 1993. *White Paper on Growth, Competitiveness and Employment : the Challenges and Ways Forward into the Twenty First Century COM (93) 700*. Brussels: Commission of the European Communities.

<sup>33</sup> OECD. 1999. *Communications Outlook 1999*. Paris: OECD.

growth.<sup>34</sup> Long distance prices fell by over 70% in real terms in the US from 1983 to 1991 and by as much as 80% in real terms in the UK from 1985 to 1997.<sup>35</sup>

Maintaining barriers to competition in the national telecom market also incurs high dynamic costs by stifling innovation over the long term. Borrus and Bar's research suggested that competition promotes innovation both in the telecom industry and in a wide variety of industries that employ information and communications technologies.<sup>36</sup> In addition, a study by the Forrester Group concluded that the openness of the national telecom market was one of the largest determinants of the growth of electronic commerce.<sup>37</sup> Their research found a strong correlation between a competitive telecom market and on-line revenues. For example, on-line revenues in the highly competitive British market were approximately \$257million in 1998 whereas on-line revenues in France where competition developed slowly in the national telecom market were limited to \$58 million. As Frieden and Rogowski argue, the high static and dynamic costs of closure increase the pressure on national governments to open their national telecom market and remove protectionist regulations.<sup>38</sup> In many major markets large business users lobbied their national governments to liberalize the telecom market and remove

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<sup>34</sup> Crandall conducted a comprehensive study of the US telecom market and concluded that the efficiency gains from competition far outweighed any possible losses from sacrificing economies of scale and scope. Crandall, Robert W. 1991. *After the Breakup*. Washington, DC: Brookings Institute. A study by Winston cited in *The Economist* showed that deregulation in seven US industries during the 1980s, including the telecom industry produced welfare gains of \$33-43 billion for US consumers by 1990. "Economic Deregulation: Days of Reckoning for Micro-economists" *Journal of Economic Literature* September 1993 as cited in "Heavens! Deregulation works." *The Economist* 6 November 1993.

<sup>35</sup> OECD. 1995b. *Telecommunication Infrastructure: The Benefits of Competition*. Paris: OECD.

<sup>36</sup> Bar, François, and Michael Borrus. 1997. *Why Competition Is Necessary in Telecommunications and How to Achieve It: The Experience of Advanced Economies*. Berkeley: Berkeley Roundtable on the International Economy. See also Bradley, Stephen P., Jerry A. Hausman, and Richard L. Nolan, eds. 1993. *Globalization, Technology and Competition : The Fusion of Computers and Telecommunications in the 1990s*. Boston: Harvard Business School Press.

<sup>37</sup> [www.forrester.com](http://www.forrester.com)

barriers to competition in order to bring down high prices and improve the availability of new services. For example, in the UK the powerful financial service industry's fierce complaints about the British Post Office's high prices and poor quality helped to accelerate Thatcher's radical reform of the telecom industry.<sup>39</sup>

### ***Price Convergence***

Some analysts point to the convergence of prices in certain competitive market segments as evidence that market forces and not national regulatory policy have in fact begun to determine competitive outcomes in the telecom industry.<sup>40</sup> Under the monopoly regime, the governments restricted market access and maintained unbalanced tariff structures that benefited residential users. From a microeconomic perspective, when these policy induced market distortions are reduced, prices should move towards marginal cost.<sup>41</sup> A study by Analysys indicates that retail prices started to converge across countries during the 1990s in the competitive markets for business services and mobile communications.<sup>42</sup>

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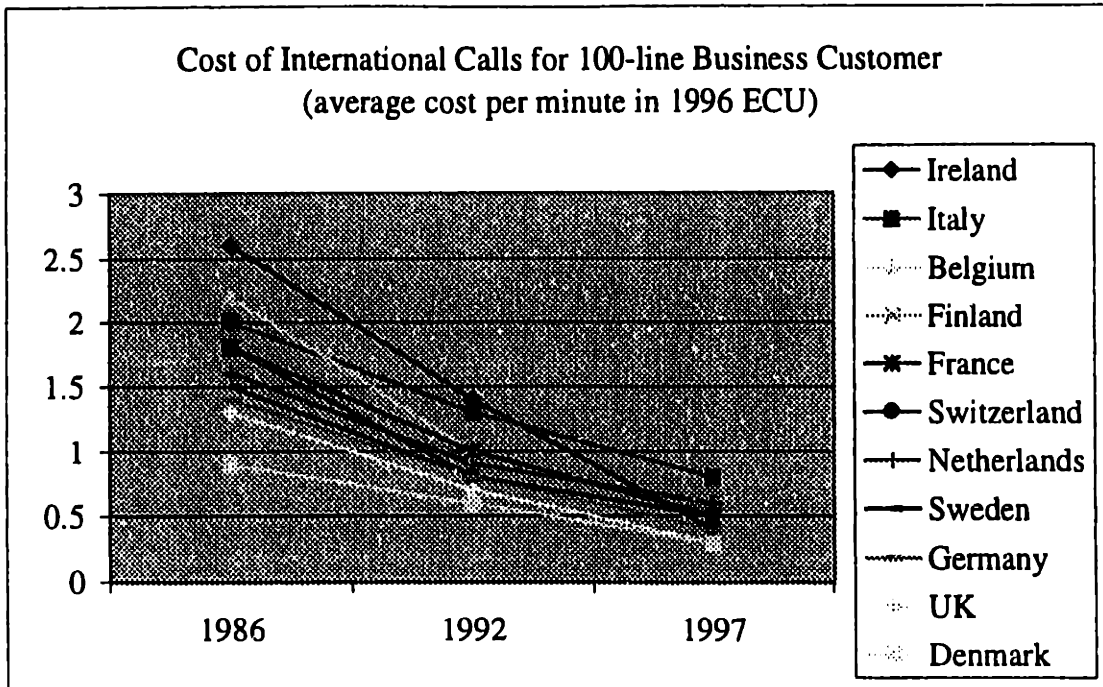
<sup>38</sup> Frieden, Jeffrey A., and Ronald Rogowski. 1996. The Impact of the International Economy on National Policies: An Analytical Overview. In *Internationalization and Domestic Politics*, edited by H. V. Milner and R. O. Keohane. Cambridge: Cambridge University Press.

<sup>39</sup> Vogel, Steven K. 1996. *Freer Markets, More Rules*. Ithaca: Cornell University Press.; Hills, Jill. 1986. *Deregulating Telecoms: Competition and Control in the United States, Japan and Britain*. Westport, Connecticut: Quorum Books.

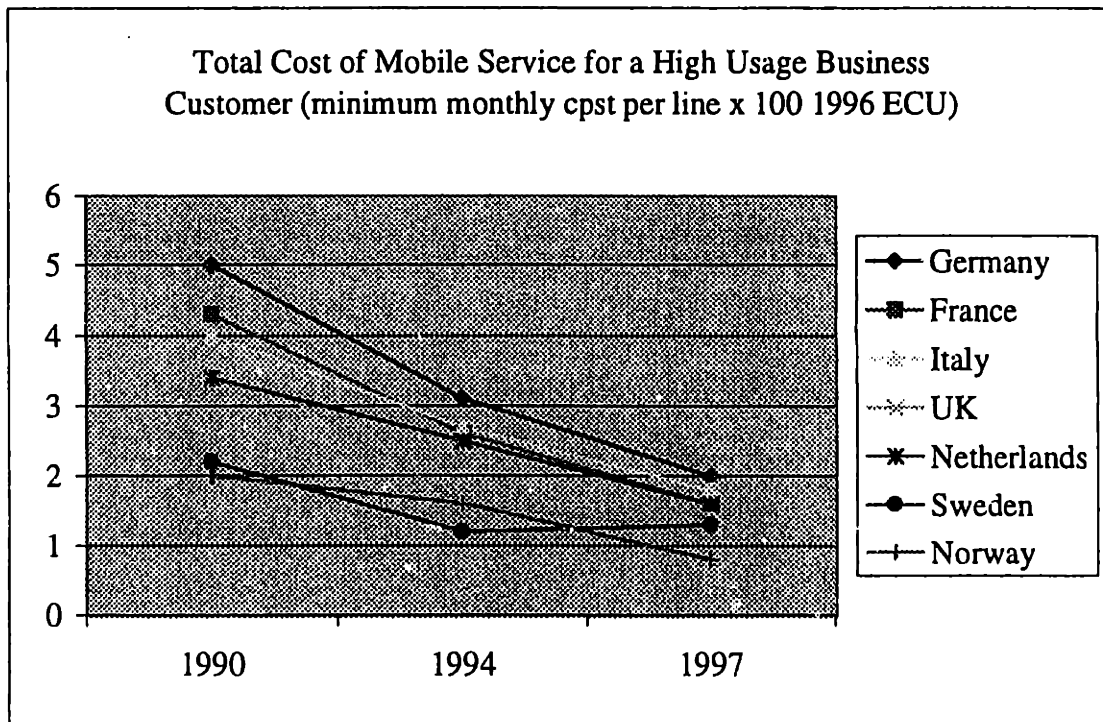
<sup>40</sup> Interviews London, Brussels and Bonn. Analysys, Cutting the Costs: The Falling Price of Telecoms in Europe 1997. [www.analysys.com](http://www.analysys.com)

<sup>41</sup> Bradley, Stephen P., and Jerry A. Hausman, eds. 1989. *Future Competition in Telecommunications*. Boston: Harvard Business School Press.; Baumol, William J., and Alan S. Blinder. 1988. *Economics Principles and Policy: Microeconomics*. New York: Harcourt Brace Jovanovich, Inc..

<sup>42</sup> Analysys, Cutting the Costs: The Falling Price of Telecoms in Europe 1997. [www.analysys.com](http://www.analysys.com)



Source: Analysys



Source: Analysys

The graphs indicate that the differences in national prices in these two competitive market segments decreased significantly and prices appeared to be converging towards those in the highly competitive UK and Scandinavian markets. In the long term, some analysts predict that intense competition and technological advances will push retail prices for basic telephony to converge on zero.<sup>43</sup> To summarize, the liberalization of national markets, technological advances, the intensification of competition and the high costs of closure challenged the ability of national governments to maintain barriers to competition and generated strong predictions that a single, open market model of competition will emerge in the telecom industry.

### ***INTERNATIONALIZATION***

#### ***The operators' international expansion***

The liberalization of the national telecom markets went hand in hand with another fundamental change in the telecom industry -- the internationalization of the telecom operators. As telecom markets around the world opened to competition and foreign investment, established operators and new players entered foreign markets and started constructing international networks. For the former PTOs, the loss of their domestic monopolies provided a powerful incentive to expand into new market segments and foreign markets to seek new sources of revenue. For example, when France Télécom's domestic fixed line revenues fell 5.4% in the first three quarters of 1998, CEO Michel Bon announced that he hoped to raise earnings from the firm's international activities from 8% to one third of total revenues by 2006.<sup>44</sup> At the same time, privatization gave the former PTOs greater flexibility to expand abroad and allowed them to cement

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<sup>43</sup> Already in the UK, several internet service providers, such as the retailer Dixons, offered customers free internet access. [www.freereserve.net](http://www.freereserve.net)



international alliances through stock swaps as in the case of France Télécom and Deutsche Telekom's Global One alliance.

When the European telecom markets opened to competition in 1998, several of the large former PTOs invested in neighboring markets. For example, British Telecom took equity stakes in Viag Interkom in Germany, Lyonnaise Câble in France and Mediaset in Italy. In addition, a few of the incumbents' new domestic competitors, such as Mannesmann, also invested in new entrants in other European markets to establish a strong regional presence. Privatizations in emerging markets also provided attractive opportunities for the European PTOs to enter the rapidly growing markets. For example, Telefónica de Espana invested aggressively in Latin American telecom privatizations and became a leading operator throughout the region.

#### **PTO Foreign Direct Investment**

<b>Operator</b>	<b>Major Foreign Investments</b>
<b>Telefónica de España</b>	CTC, Chile Telefónica de Argentina, Argentina Telefónica del Perú, Perú (31.5%) CANTV, Venezuela Telefónica Larga Distancia, Puerto Rico (79%) Companhia Riograndense de Telecomunicações, Brasil
<b>France Télécom</b>	Sprint, USA (10%) Deutsche Telekom, Germany (2%) Telecom Argentina, Argentina (9.9%) Telmex, Mexico (6.1%) VNPT, Vietnam Pramindo, Indonesia (35%) CI Telecom, Ivory Coast (51%) Sonatel, Senegal (33.3%)

<sup>44</sup> Vincent Boland, "France Télécom relies on alliance for growth" *Financial Times* 17 November 1998.

In addition to the opportunities created by liberalization and privatization, the operators' international expansion was motivated by the growing demand from multinationals for customized global service. During the 1990s, both manufacturing and service industries expanded into foreign markets and located production sites around the world.<sup>45</sup> World trade in goods and services grew from 19% of GDP in 1990 to 23% in 1998 with intra-firm trade accounting for more than 50% of total trade.<sup>46</sup> Telecom companies followed their customers abroad and provided multinationals with customized international service to link their operations around the globe.

To share the cost of infrastructure investment and expand their geographic coverage, the large European incumbents and a few aggressive new players entered a series of frequently changing cross-border alliances and joint ventures.

#### **International Alliances 1998**

<i>Global One</i>			<i>Unisource</i>
France Télécom	WorldCom	AT&T	Telia (Sweden)
Deutsche Telekom	MCI	British Telecom	PTT Telecom (NL)
Sprint	Telefónica		Swiss Telecom

Present in all major markets, these international groups promised to provide MNE with seamless global service from a single point of contact. For example, Global One spanned 65 countries and offered large business users customized services such as global virtual private networks, call centers, international calling cards and global frame relay. Global One also invested heavily in a broadband ATM network that could carry data, voice and multimedia services to 42 countries. The rash of highly publicized marriages and breakups during the 1990s attested to the difficulty in maintaining these international

<sup>45</sup> See for example, Dunning, John H. 1993. *The Globalization of Business*. New York: Routledge.

alliances. For example, BT and MCI's Concert alliance fell apart when World Com purchased the American long distance carrier in 1997. These alliances also proved to be costly as in the case of Global One which lost an estimated \$800 million in 1997 alone.<sup>47</sup> Nevertheless, the trend of cross border alliances continued as did the flow of investments. After the failure of its alliance with MCI, British Telecom entered into a \$10 billion joint venture with AT&T to develop a global network based on internet protocol technology. Despite Global One's significant losses, France Télécom, Deutsche Telekom and Sprint invested nearly \$500 million in 1998 to build Global One's own international network.

To compete for large business customers, a new generation of flexible, aggressive carriers such as WorldCom, Qwest and Colt set up operations around the world and invested heavily in their own high capacity international networks. They also acquired local fiber optic city rings in numerous countries allowing them to reach customer premises directly. These so-called new generation operators grew rapidly since the mid-90s and represented 11% of the global market by 1997.<sup>48</sup> At the European level, these operators built fiber optic rings in all major cities and invested heavily in their own pan-European high capacity networks.<sup>49</sup> For example, the dynamic American newcomer, Qwest, recently announced a joint venture with KPN of the Netherlands to build and

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<sup>46</sup> *World Economic Outlook* www.imf.org

<sup>47</sup> On the Line: Gary Foresee, chief executive of Global One, "\$1 million-a-day losses fail to faze him" FT Telecoms Survey *Financial Times* 18 November 1998.

<sup>48</sup> FT Telecoms Survey *Financial Times* 18 November 1998.

<sup>49</sup> To give an indication of the competitive challenge these new operators pose, this table shows several pricing options available to Reuters for the monthly rental of a 2Mbit line between their offices in London and Paris

**Monthly leased line pricing options (US\$)**

France Télécom – British Telecom standard price	40,000
France Télécom – British Telecom discount price	20,000
Hermes discount price	13,000
Band-X with Colt tails	4,000
Viavel (IRU) with Colt tails	1,000

Source: OECD

operate a high capacity internet protocol network in Europe and link it to Qwest's state of the art North American network. With a market value of \$12 billion, Qwest posed a serious competitive threat to the former monopolists because it can use its network's huge bandwidth to offer high quality data, video and voice services at very low cost.

Similarly, WorldCom established a strong presence in all of the major European markets offering international private circuits, corporate internet services and international frame relay among other services. Through its ambitious acquisitions and its merger with MCI, WorldCom became one of the leading providers of international business services.

WorldCom also started to offer public switched voice service in major European cities first in the liberalized UK and Swedish markets and then in Germany.

The growth of international alliances and new globally oriented carriers led many industry analysts to predict that by 2005 a handful of giant firms would supply telecom services around the globe. For example, a report by the telecom consultancy Analysys entitled *Global Turf Wars* predicted that widespread consolidation would result in the survival of "a handful of suppliers capable of transporting telecoms globally at ultra-low costs, a few full service suppliers operating globally and a number of specialized network suppliers including for example, mobile phone operators."<sup>50</sup> Present in all major markets this small group of powerful firms would offer the same services and the same advanced technologies anywhere in the world. By the late 1990s, the market for customized international business services showed signs of globalization. In this highly competitive

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<sup>50</sup>Tim Hills and David Cleevely *Global Turf Wars* [www.analysys.com](http://www.analysys.com) as cited in Alan Cane "Dynamic growth shapes industry of tomorrow" *Telecom Survey Financial Times* 18 March 1999; OECD. 1995a. *The Changing Role of Telecommunications in the Economy: Globalization and its Impact on National Telecommunications*. Paris: OECD.

market segment a few multinational groups such as Global One and WorldCom provided seamless global service in more than 70 countries throughout the world.

***TECHNOLOGICAL CHANGE***  
***The convergence of telecoms, computing and broadcasting***

Technological change has been called a Schumpeterian force of “creative destruction” in the telecom industry that facilitated both liberalization and globalization. Advances in transmission and switching technologies reduced the natural monopoly characteristics of telecommunications by cutting the cost of network installation and encouraging market entry. Technologies such as call back services allowed operators to by-pass national regulatory restrictions and provide service in a foreign market without a physical presence. New wireless technologies sparked the rapid growth of the mobile market and started to challenge the traditional fixed network in the local loop. Perhaps most importantly, digitalization has blurred the lines between telecommunications, broadcasting, and computing and stimulated the growth of new networks and services.

Technological convergence has led to the explosive growth of the internet and a myriad of new services and applications. This new market can be thought of in terms of four overlapping segments. First, electronic commerce and on-line transactional services allow consumers and business to purchase a wide array of goods and services over the internet. Start-ups like Amazon or the British boo.com and the e-business side of established firms like Charles Schwab’s on-line brokerage offer consumers low prices and access to information such as real time stock quotes and book reviews. Several of the European telecom companies, including France Télécom and Deutsche Telekom set up their own internet portals which provide direct links to shopping sites and in the case

of France Télécom's Télécommerce site even offer secure, centralized billing.<sup>51</sup> A few telecom operators also allow customers to pay their phone bills or sign up for new services on-line.<sup>52</sup> The US market for such business to consumer e-commerce was \$8 billion in 1998 and was expected to reach \$108 billion in 2003. The much larger, though less publicized market is that for business to business e-commerce which was forecast to grow from \$43 billion in 1998 in the US to \$1.3 trillion in 2003.<sup>53</sup>

The second new market segment is that for interactive multimedia services which offer consumers entertainment, news and educational content from firms such as Bertelsmann or MSNBC. Some telecom operators including Vivendi's Cegetel and Fininvest' Mediaset planned to offer interactive multimedia services using content from their parent companies' extensive media holdings; however, many of these services such as near video on demand and digital interactive TV are still primarily in the trial stages. Third, to support these different on-line services, IBM, EDS or Anderson among others offer information services including system integration and software. Finally, telecom operators supply high capacity networks to transport the new services and applications. By the late 1990s, the early visions of an information superhighway with fiber optic to the curb gave way to a more dynamic conception of a network of networks. Increasingly, information will pass over a fluid combination of fixed and wireless networks using a range of transmission technologies including ASDL, IP and ATM. Both established telecom operators and start-ups like Qwest and Level3 have invested heavily in international high capacity networks to meet the growing demand for data communications.

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<sup>51</sup> [www.tele-commerce.fr](http://www.tele-commerce.fr)

<sup>52</sup> See for example Optus' [www.dingoblue.co.au](http://www.dingoblue.co.au)

The growth of the internet in the late 1990s testifies to the magnitude of the economic and social change that technological convergence has only just begun to produce. Likened to the industrial revolution, the “information revolution” has generated a great deal of hype, but behind all the proclamations, prophetic visions, and soaring stock prices lie very real changes. The innovative new services and applications and the high capacity networks that carry them have already started to change the way in which we do business, communicate and learn. There is a vast literature on the economic, political and social impact of the new information and communication technologies.<sup>54</sup> Within this literature, conceptions of a networked society or an electronic marketplace suggest that the internet transcends national boundaries and imposes a global free market model of competition. They paint a picture of a market for goods, services and information that spans the globe and eludes government control.<sup>55</sup> These visions are based on two important characteristics of the internet: its decentralized structure and its global reach.

First, the internet can be accessed by anyone anywhere in the world using a PC, a cable modem or a digital wireless service. For virtually no cost any individual, interest group or business can set up a home page and post information for anyone to access. The sheer volume of information and the diversity of sources is overwhelming, even as new

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<sup>53</sup> “The net imperative” *The Economist* 26 June 1999.

<sup>54</sup> Two of the most interesting are Castells, Manuel. 1996. *The Rise of the Network Society*. Malden, MA: Blackwell. and Dertouzos, Michael. 1997. *What will be*. New York: Harper Collins. See also Negroponte, Nicholas. 1996. *Being Digital*. New York: Vintage Books.; Gates, Bill, Nathan Myhrvold, and Peter M. Rinearson. 1995. *The Road Ahead*. New York: Viking.; Kahin, Brian, and Charles Nesson. 1996. *Borders in Cyberspace*. Cambridge: MIT Press.; Schiller, Dan. 1999. *Digital Capitalism : Networking the Global Market System*. Cambridge: MIT Press.; Fukuyama, Frances. 1999. *The Great Disruption : Human Nature and the Reconstitution of Social Order*. New York: Free Press.

<sup>55</sup> Dertouzos develops the ideas of an information marketplace in great detail. He describes it as “a twenty-first century village marketplace where people and computers buy, sell and freely exchange information and information services.” Dertouzos, Michael. 1997. *What will be*. New York: Harper Collins.

portals and more powerful search engines try to provide customized service. The cost of setting up an e-business to sell goods, services and information is also very low and there are millions of sites offering anything from French cheese to personal computers. Buyers and sellers can be located in almost any nation and purely electronic transactions such as a stock trade or downloading a music album take place around the globe without stopping at national frontiers. The networks over which these services travel are also increasingly global in their reach. Interestingly, while transactions and information exchanges are decentralized around the world, the provision of the international networks is highly concentrated on a global scale. The high cost of infrastructure investment and substantial economies of scale push network operators to form alliances and joint ventures to build the high capacity networks needed to carry the growing volume of internet traffic.<sup>56</sup>

The enormous flow of information, the ease of entry for buyers and sellers and the global reach of the internet make it very difficult for governments to monitor let alone control. Attempts by national policy makers to restrict their citizens' access to certain content have proven unsuccessful. For example, when the German government tried to prevent ISPs from allowing German users to access certain foreign sites with neo-Nazi content, users could still use a series of links from other sites to access the material that was illegal in Germany.<sup>57</sup> Governments also struggled to enforce national laws on privacy, intellectual property and taxation on the internet. Recognizing the limitations to their authority over the internet, some governments, notably the United States have

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<sup>56</sup> "Finding partners becomes priority" Telecom Survey *Financial Times* 30 September 1998.

<sup>57</sup> China has also been unable to maintain its ban on dissident communications over the internet as was the USSR prior to its collapse Skolnikoff, Eugene B. 1993. *The Elusive Transformation: Science, Technology and the Evolution of International Politics*. Princeton, NJ: Princeton University Press..



advocated industry self-regulation.<sup>58</sup> There is a strong tradition of self-regulation in the internet. Comprised of companies, industry groups, non-profits and government agencies, the World Wide Web Consortium has played an important role in establishing technical standards and in developing common solutions to issues of privacy and decency.<sup>59</sup> National governments have also used global forums such as the OECD to try to establish a common approach to issues of taxation and intellectual property rights.<sup>60</sup>

### ***THE ROLE OF NATIONAL POLICY***

Liberalization, internationalization and technological change all challenge the ability of national government to both maintain barriers to competition and shape competitive outcomes in the national telecom markets. Yet, at the same time these changes create new opportunities for national governments to influence the development of the national market through regulation and industrial policy.

The introduction of competition into the markets is accompanied not by deregulation as many assume, but by *reregulation*.<sup>61</sup> National governments established universal service regulations to make basic telecom services available to all segments of society. Policy makers also used regulation to prevent the former PTTs from using their dominant position to crush the new entrants and ensure that competition did develop in the liberalized market. Scholars such as Vincent Wright show how regulation is a subjective, unplanned, and unpredictable process which is highly dependent on national

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<sup>58</sup> White House. 1997. *A Framework for Global Electronic Commerce*. Washington, DC: The White House. See also [www.ecommerce.gov](http://www.ecommerce.gov); *Information Infrastructure Sourcebook*, John F. Kennedy School of Government 1993-1995.

<sup>59</sup> See for example, "The Web's Secret Government" *Technology Review* November-December 1998.

<sup>60</sup> *Realizing the Potential of Global Electronic Commerce*, Ottawa 7-9 October 1998; [www.oecd.org](http://www.oecd.org); Global Information Networks Ministerial Conference [www.ispo.cec.be](http://www.ispo.cec.be)

<sup>61</sup> Vogel, Steven K. 1996. *Freer Markets, More Rules*. Ithaca: Cornell University Press.; Grande, Edgar. 1994. The New Role of the State in Telecommunications. *West European Politics* (July).

institutional arrangements.<sup>62</sup> According to Michael Porter, regulation is also shaped by the regulators' often flawed conception of industry competition and corporate strategy.<sup>63</sup> Using a case from the telecommunications industry, the American inter-LATA inter-exchange market, Porter also critiques the regulator's priorities for unwisely favoring price reduction over the stimulation of innovation. Showing how his own five forces model of competition and theory of competitive advantage produce a dramatically different picture of a regulated industry, Porter reveals how regulators' conceptual framework can significantly alter their characterization of and subsequent approach to an industry.

National governments also introduced industrial policy initiatives to promote the development of the internet within their national borders. One way in which the government tried to promote information technologies was by acting as a lead user in areas under its jurisdiction, including, health, education, and culture. While these initiatives were designed to help to stimulate demand, the technologies and partners that the governments selected influenced the development of the industry in distinct ways. Although the internet crosses national borders indiscriminately, its usage raises serious concerns about privacy, the protection of minors, taxation and social equity that national governments struggle to regulate in different ways.

The real question is not so much whether these windows of potential diversity exist, but whether governments can use them to influence the development of the national telecom market given the strong constraints imposed on national policy by market

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<sup>62</sup> Wright, Vincent. 1994. Reshaping the State: The Implications for Public Administration. *West European Politics* (July).

<sup>63</sup> Michael Porter in Sapolsky, Harvey S., and et al, eds. 1992. *The Telecommunications Revolution*. New York: Routledge.

opening, MNEs and new technologies. Closely intertwined and mutually reinforcing, liberalization, internationalization and technological innovation pose a significant challenge to national policy makers as they try to regulate competition and promote investment in new technologies within their national borders.

## CHAPTER 3

### THE SINGLE EUROPEAN TELECOM MARKET

The stakes are high. If we succeed we will give new vitality to the single market in all sectors and make the European Information Society a reality. If we fail we will see Europe fall behind the US as a destination for investment and as a center of economic growth and opportunity.

-- Sir Peter Bonfield, Chief Executive of British Telecom<sup>1</sup>

On January 1, 1998, most of the European Union member states opened their national telecom markets to full competition marking the culmination of a long process of reform aimed at creating a single European telecom market.<sup>2</sup> Since 1987 the European Commission and the national governments represented on the Council of Ministers adopted a series of policies that progressively dismantled the national telecom monopolies and liberalized the European telecom markets for equipment, services and infrastructure. The European telecom policy not only locked the member states in to market liberalization, but also constrained the regulatory and industrial policy options available to national policy makers. The European harmonization rules established a common regulatory framework for the telecom sector in order to eliminate any legal and technical barriers to the development of a pan-European market. Furthermore, the Commission used its strong competition authority to ensure that the national governments complied with the single market policies. Regulations or industrial policies that impeded market entry or favored national firms could be challenged and struck down under European competition law. By breaking down the national frontiers and harmonizing regulation, the explicit objective of the European telecom policies was to create a single

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<sup>1</sup> "EU telecoms shake-up heralds a bloody war" The Financial Times 19 December 1997 : 3.

European telecom market and ensure that consumers enjoyed access to the same telecom services, low prices and technological innovations throughout the EU.

### ***Liberalizing European Telecoms: the Common Market***

In the early 1980s the divestiture of AT&T in United States and the introduction of competition into the British market sparked a serious review of the public telecom monopolies in continental Europe. Several European governments established national committees to study the possibilities for market liberalization and organizational change in the telecom industry.<sup>3</sup> Building on burgeoning national reform movements, the European Commission started to develop a European policy of telecom liberalization as part of its renewed drive to create a common market by 1992.<sup>4</sup> There were several reasons why telecom reform quickly became a high priority for the Commission. First, telecommunications was a large, dynamic industry that represented close to 3% of European GDP. In addition, the architects of European integration considered a high quality, affordable communications infrastructure to be a vital component of European integration and European economic prosperity. As the Commission wrote in its 1987

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<sup>2</sup> Greece, Ireland and Portugal were granted additional time to modernize their telecom infrastructure before fully liberalizing their national markets.

<sup>3</sup> See for example, Witte, Eberhard. 1987. *Neuordnung der Telekommunikation : Bericht der Regierungskommission Fernmeldewesen*. Heidelberg: R.v. Decker's Verlag.

<sup>4</sup> Ungerer, Herbert, and Nicholas P. Costello. 1990. *Telecommunications in Europe*. Luxembourg: Office for Official Communications of the European Commission. For more information on the passage of the Single European Act and the relaunching of the Common Market initiative see Moravcsik, Andrew. 1991. Negotiating the Single European Act. *International Organization* (Winter):19-56.

**Green Paper:**

A technically advanced, European-wide and low cost telecommunications network will provide an essential infrastructure for improving the competitiveness of the European economy, achieving the internal market and strengthening Community cohesion – which constitute priority Community goals reaffirmed in the Single European Act.<sup>5</sup>

Finally, dismantling the entrenched national telecom monopolies made a powerful political statement by extending the Commission's reach into an industry that was traditionally viewed as the exclusive domain of the national governments.<sup>6</sup>

***Opening the markets for terminal equipment and value added services***

With the publication of its landmark *Green Paper on the development of the common market for telecommunications services and equipment* in 1987, the Commission took the first major step toward developing a common European approach to the telecom industry.<sup>7</sup> The Green Paper advocated the rapid liberalization of the European terminal equipment market and the progressive opening of telecom services to competition. The Commission also recommended the separation of the regulatory and operational functions within the national PTT administrations and the adoption of several harmonization measures including the mutual recognition of type approval for terminal equipment and non-discriminatory access to the public switched telecom network.

Acting on these proposals, the Commission invoked its authority under Article 90 of the Treaty of Rome and in May 1988 issued a binding directive requiring the member

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<sup>5</sup> Commission of the European Communities. 1987. *Towards a dynamic European economy: Green Paper on the development of the common market for telecommunications services and equipment*. Brussels: Commission of the European Communities.

<sup>6</sup> Since the early 1970s, the Commission had tried unsuccessfully to open the member states' public procurement in the telecom industry. The national governments argued that they had exclusive rights over telecommunications and excluded the sector from the 1976 EC Directive on opening public procurement.

<sup>7</sup> Commission of the European Communities. 1987. *Towards a dynamic European economy: Green Paper on the development of the common market for telecommunications services and equipment*. Brussels: Commission of the European Communities.

states to liberalize their national markets for telecom terminal equipment. Article 90 allowed the Commission to overturn member states' policies relating to exclusive or special rights if the national policies violated the Treaty of Rome. The Commission decided that the national telecom operators' monopolies over the distribution of terminal equipment violated Article 3 of the Treaty which guaranteed a competition-oriented economic system throughout the European Community. Used only once before, Article 90 allowed the Commission to act autonomously without the consent of the Council of Ministers or the European Parliament.<sup>8</sup> The Commission's unilateral action elicited strong protests from several national governments. The French government, later joined by Germany, Italy, Belgium and Greece, challenged the equipment directive before the European Court of Justice. According to several accounts, the majority of the member states supported the introduction of competition in terminal equipment and the objective of the French case was to block the Commission's use of Article 90, not to prolong the national terminal equipment monopolies.<sup>9</sup> In fact, the French government already allowed the competitive supply of terminal equipment. With the case still pending, in June 1988, the national governments represented on the Council of Ministers

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<sup>8</sup> Some analyses of European telecom policy focus heavily on Article 90 and the Commission's unilateral actions to liberalize telecom, for example, Schneider, Volker. 1997. *Europeanization and the Redimensionalization of the Public Sector : Telecommunications in Germany, France and Italy*. This view has been contested by others such as Cohen, Elie. 1996. *La Tentation Hexagonale*. Paris: Fayard. who show how that the interests of powerful domestic economic and political concerns created a strong consensus in favor of European telecom liberalization and that the national governments determine both the pace and the scope of the European telecom policies. Rather than focusing on this debate, my analysis follows the example of Schmidt and focuses on how the Commission's push and the national governments' support for telecom liberalization combined to create the European single telecom market policies. Schmidt, Susanne K. 1997. Sterile Debates and Dubious Generalisations: European Integration Theory Tested by Telecommunications and Electricity. *Journal of Public Policy* 16 (3):233-271.

<sup>9</sup> Cohen, Elie. 1996. *La Tentation Hexagonale*. Paris: Fayard. Interviews.

unanimously endorsed the Green Paper and its recommendation to liberalize the national markets for telecom equipment and services.<sup>10</sup>

In 1989 the Commission and the national governments reached an important political compromise on how to proceed with telecom liberalization. The Commission and the Council agreed to liberalize the European telecom market for equipment and services gradually, but to maintain the member states' exclusive rights over the so-called "reserved services" including basic voice telephony. This agreement allowed the national governments to decide whether to preserve the national PTO's monopoly over public voice service as most did or to allow competition as Thatcher had done several years before. The Commission and the Council also agreed that any Commission directive to liberalize telecoms would be accompanied by harmonization measures approved by the Council of Ministers. Although the European Court of Justice subsequently upheld the Commission's right to use Article 90, this agreement meant that the Commission would not use Article 90 without the Council's consent.<sup>11</sup> As a symbol of this coordinated approach, the Directive on Telecommunications Services and the Directive on Open Network Provision (ONP) were adopted simultaneously in June 1990. The Commission's Services Directive opened the markets for value-added services, including private voice services provided on leased lines. The ONP framework created a common approach to network access based on transparency and non-discrimination.

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<sup>10</sup> Council Resolution of 30 June 1988.

<sup>11</sup> Interviews, Brussels 1996. This political compromise was also described in a speech by Michel Carpentier, former Commissioner for Telecoms at the IDATE Conference "20 ans ou la Préhistoire du Cybermonde" Montpellier, France. 20 November 1997.



### ***Full market liberalization***

In 1992 the Commission conducted a review of the European telecom policies and opened broad public consultations to determine whether liberalization should be extended further. The Commission recommended that the national markets for basic voice telephony service and infrastructure be opened to competition by 1996.<sup>12</sup> At the time, basic voice telephony represented approximately 90% of the market for telecom services and 80% of the turn over of a public operator such as France Télécom. The Commission argued that extending competition into this market would benefit consumers and stimulate growth in the European telecom industry. Although most of the national governments accepted greater liberalization in principle, France, Germany and the Southern States argued that the Commission was proceeding too quickly.<sup>13</sup>

Faced with opposition to its accelerated plan from the majority of the national governments seated in the Council, the Commission did not use its authority under Article 90 to force the member states to liberalize all services and infrastructure by 1996, but rather tried to negotiate an agreement. Commission officials seemed to recognize that for competitive markets to develop, it was crucial that the member states not only supported liberalization but also agreed to implement the European liberalization measures.<sup>14</sup> Moreover, using Article 90 to push liberalization against strong member

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<sup>12</sup> Commission of the European Communities. 1992. Review of the Situation in the Telecommunications Services Sector. Brussels: Commission of the European Communities. and the subsequent public consultations. The Commission also recommended changes to reduce intra-EU rates and increase the availability of leased lines.

<sup>13</sup> Interviews. Schmidt, Susanne K. 1998. Commission Activism: Subsuming Telecommunications and Electricity under European Competition Law. *Journal of European Public Policy* 5 (1). As the Commissioner for Telecommunications Michel Carpentier explained, "I don't know a member state or an operator which has said we shouldn't liberalize. The question is when and how." Andrew Adonis and Andrew Hill, "Lifting the lid on liberalization" *The Financial Times* 10 May 1993

<sup>14</sup> Interviews. Brussels 1995, 1996 and 1998. This point is also developed in Kiessling, T, and Y Blondeel. 1998. The EU regulatory framework in telecommunications. *Telecommunications Policy* 22 (7):571-592..

state opposition risked undermining political support for the Common Market and the planned Economic and Monetary Union.

On the national level an important realignment of domestic interests in France and Germany shifted the balance of power in favor of telecom liberalization; however, opposition from the unions and their supporters on the political left continued to make reform very difficult.<sup>15</sup> In this context, the negotiating strategy of France and Germany seemed to be to gain additional time for the national telecom operator to adjust to liberalization and to leave as much flexibility as possible for the national governments to address domestic political concerns about universal service, tariff rebalancing and employment. Some scholars suggest that the domestic opposition to telecom reform ultimately increased the national governments' commitment to a European policy of market liberalization. In the face of domestic conflict, it may have been easier for national policy makers to lock themselves in to the European single telecom policy than to take an isolated national decision to end the national monopoly on voice service and infrastructure.<sup>16</sup> To give an example, German Post Minister Bötsch urged his colleagues on the Council of Ministers to adopt a European directive to liberalize alternative infrastructures at a time when the opposition of the SPD made such a change impossible in Germany.<sup>17</sup>

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<sup>15</sup> The case studies discuss this shift in domestic interests and the process of liberalization in both nations.

<sup>16</sup> In the case of telecommunications this argument is made by Cohen, Elie. 1996. *La Tentation Hexagonale*. Paris: Fayard. and Schmidt, Susanne K. 1997. Sterile Debates and Dubious Generalisations: European Integration Theory Tested by Telecommunications and Electricity. *Journal of Public Policy* 16 (3):233-271.. A similar argument about European integration more broadly is well developed in Milward, Alan S. 1992. *The European Rescue of the Nation-State*. Berkeley, CA: University of California Press. At a 1997 conference, former French Telecom Minister Bruno Lasserre said that when French politicians were asked why telecom liberalization was necessary when France Télécom provided high quality service, "It is then that one replies : we must change because we are members of the European Union and the Treaty of Rome imposes change upon us." IDATE. 1997. 20 ans ou la Prehistoire du Cybermonde, at Montpellier.

<sup>17</sup> Schmidt, Susanne K. 1997. Sterile Debates and Dubious Generalisations: European Integration Theory Tested by Telecommunications and Electricity. *Journal of Public Policy* 16 (3):233-271.

In July 1993 the Commission and the national governments agreed to liberalize the national markets for all services including basic voice telephony by January 1, 1998.<sup>18</sup> However, the controversial issue of infrastructure competition remained unresolved.<sup>19</sup> As the debates over network liberalization raged on, two influential reports highlighted the economic benefits of opening the European telecom infrastructure to competition. Both Commission President Jacques Delors' *White Paper on Growth, Competitiveness and Employment* and the report of the EU Industry Group on the Information Society led by Commission Vice-President Martin Bangemann argued that a modern and efficient telecom infrastructure was essential to establish a foundation for economic growth and realize the benefits of the Information Society.<sup>20</sup> The Bangemann Report insisted that breaking up the national telecom monopolies and freeing the telecom operators from non-competitive political obligations would not only improve efficiency but also encourage innovation. In fact, the Report's top policy recommendation was "to accelerate the ongoing liberalization of the telecommunications sector by opening up to competition infrastructure and services still in the monopoly area." In the mid-1990s, Europe trailed the US in terms of miles of fiber optic cable, digital switching, internet usage and the number of computers in homes as well as in qualitative terms such as the inventiveness of software and the appeal of mass entertainment.<sup>21</sup> Both Bangemann and Delors contended that a single European market for telecom networks and services would stimulate

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<sup>18</sup> Greece, Ireland, Portugal, and Spain obtained an additional transitional period of up to five years to allow for the modernization of their networks. Luxembourg also received a two year extension. Council Resolution of 22 July 1993 (93/C213/01).

<sup>19</sup> Stehmann, Oliver. 1995. *Network Competition for European Telecommunications*. Oxford: Oxford University Press.

<sup>20</sup> Commission of the European Communities. 1993. *White Paper on Growth, Competitiveness and Employment : the Challenges and Ways Forward into the Twenty First Century COM (93) 700*. Brussels: Commission of the European Communities. High Level Group on the Information Society. 1994. *Europe and the Global Information Society*. Brussels: European Union.

investment and innovation and accelerate the slow growth of new information and communication technologies in Europe.

At the end of 1994 the member states agreed to liberalize telecommunication infrastructure throughout the European Union by January 1, 1998.<sup>22</sup> The European single telecom market policies dismantled the long standing public telecom monopolies and opened the national markets to foreign and domestic competition in all services and networks. Moreover, the development of a common European telecom policy was important change from what had been a purely national policy area.

### ***Regulatory Harmonization***

As part of the single market initiative, European policy makers adopted a series of measures to harmonize the national telecom regulations and reduce the technical and legal barriers to market integration. The Commission argued that a consistent, open approach to access, pricing and technical standards would ensure that liberalization did create a single market and allow operators to benefit from economies of scale. The EU harmonization directives defined a common set of regulatory principles and guidelines that the national governments had to follow as they opened their telecom markets to competition.

The European Open Network Provisions (ONP) established a common European approach to network access aimed at providing a stable and predictable environment for service-based competition to develop. The 1990 ONP Framework Directive required that the member states ensured open and non discriminatory access to public telecom

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<sup>21</sup>"Europe's Dash for the Future," The Economist 13 August 1994

<sup>22</sup> Extensions were again granted to Spain, Portugal, Greece, Ireland and Luxembourg. Council Resolution of December 22 1994 (94/C379/03)

networks throughout Europe.<sup>23</sup> The 1992 leased lines directive extended these principles to leased lines mandating non-discriminatory access and cost-oriented tariffs for leased lines.<sup>24</sup> The directive on the application of ONP to voice telephony laid out a common approach to universal service issues such as the low usage tariff schemes, the availability of advanced facilities and the provision of public pay-phones.

To prepare for the liberalization of infrastructure and basic voice telephony, the European Commission updated the ONP rules and developed a common European approach to regulation in a competitive environment.<sup>25</sup> In the next few years, a series of directives defined a common set of rules for critical regulatory issues such as licensing, tariff rebalancing, interconnection and universal service. The 1997 interconnection directive established guidelines for the terms and pricing of interconnection to the European public switched telecom networks.<sup>26</sup> For example, the directive stipulated that any operator judged to have significant market power had the obligation to meet all reasonable requests for interconnection. The directive also recommended that the dominant operators' interconnection rates be based on forward looking long run incremental costs and required that the cost accounting system be published. The European licensing directive determined that the member states could only limit the number of licenses issued in the national market for reasons of scarcity of radio

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<sup>23</sup> Council Directive of 28 June 1990 on the establishment of the internal market for telecommunications services through the implementation of open network provision (90/388/EEC)

<sup>24</sup> Council Directive of 5 June 1992 for the introduction of open network provision for leased lines OJ L (92/44/EC).

<sup>25</sup> Commission of the European Communities. 1995. Green Paper on the Liberalization of Telecommunications Infrastructure and Cable Television Networks Part II : A Common Approach to the Provision of Infrastructure for Telecommunications in the European Union. Brussels: Commission of the European Communities.

<sup>26</sup> EP and Council Directive 97/33/EC of 30 June 1997 on interconnection in telecommunications with regard to ensuring universal service and interoperability through application of the principles of ONP. OJ L 199/32

frequencies or numbering resources.<sup>27</sup> These rules limited the regulatory options available to national governments. For example, German policy makers seriously considered a SPD proposal to issue only a limited number of national licenses in order to prevent the fragmentation of the market; however, under the EU rules such a policy would not be allowed.<sup>28</sup>

As part of its Information Society Action Plan, the Commission also proposed guidelines for harmonizing the regulation of the internet and new on-line services. The Commission's 1997 *Green Paper on the Convergence of the Telecommunications, Media and Information Technology Sectors and the Implications for Regulation* and the ensuing consultations examined three different regulatory approaches to technological convergence: (1) extending existing telecom and audiovisual regulatory regimes to cover new services; (2) creating a distinct category for new services and regulating them separately; or (3) progressively introducing a new regulatory model to cover all services.<sup>29</sup> The Commission recommended an approach close to the third option that would regulate infrastructure and content separately.<sup>30</sup> In the Green Paper and subsequent communications, the Commission argued that this new regulatory model should be a European model so as to create economies of scale. The Council of Ministers reiterated this idea in a communication on electronic commerce stating that, "In order to allow for electronic commerce operators to reap the full benefits of the Single Market, it

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<sup>27</sup> European Parliament and Council Directive 97/13/EC of 10 April 1997 on a common framework for general authorizations and individual licenses in the field of telecommunications services OJ L 117/15

<sup>28</sup> "SPD joins opposition to telecoms law" *Financial Times* 17 May 1995.

<sup>29</sup> Commission of the European Communities. 1997. *Green Paper on the Convergence of the Telecommunications, Media and Information Technology Sectors*. Brussels: Commission of the European Communities.

<sup>30</sup> Clements, Bernard. 1998. The impact of convergence on regulatory policy in Europe. *Telecommunications Policy* 22 (3):197-205.

is essential to avoid regulatory inconsistencies and to ensure a coherent legal and regulatory framework for electronic commerce at the European level.”<sup>31</sup>

In June 1998 the Commission submitted a proposal to the Council for a directive establishing a common framework for digital signatures.<sup>32</sup> Based on the Commission communication on electronic signatures and encryption of October 1997, this directive defined essential requirements for certificates, liability rules for service providers and legal recognition standards for electronic signatures<sup>33</sup>. The directive is awaiting the Council’s approval and would come into effect in 2001. In a series of communications and resolutions the Commission and the Council also outlined a European approach to illegal and harmful content on the internet. These policy statements emphasized the need to strengthen existing legislation and encourage parental control systems to protect minors. Although many industry observers question the impact of the social initiatives and pilot projects included in the Commission’s Information Society Action Plan, the regulatory component of Action Plan may have important consequences for national internet policy and the development of the national markets for on-line services.<sup>34</sup> Only a few of the member states adopted national regulations governing the internet and multimedia technologies. In fact, in interviews policy makers in several member states said that they were waiting to adopt such policies until the European Union established a common framework.

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<sup>31</sup> *A European Initiative in Electronic Commerce* 12 May 1998 COM(97)157

<sup>32</sup> COM(98)297 [www.ispo.cec.be](http://www.ispo.cec.be)

<sup>33</sup> Communication on security and trust in electronic communications 8 October 1997 COM(97)503

<sup>34</sup> Commission of the European Communities. 1998. *Europe at the Forefront of the Global Information Society : Rolling Action Plan*. Brussels: Commission of the European Communities. To boost awareness about the internet and on-line services, the European Commission provided information to businesses, consumers and policy makers on electronic commerce by issuing reports, sponsoring conferences and compiling electronic databases and other on-line resources (see [www.ispo.cec.be](http://www.ispo.cec.be)). The European

***Enforcement : European Competition Law***

Once the European policies to liberalize and harmonize the national telecom markets were in place, the Commission used its strong competition authority to ensure that the national governments complied with European law. The Competition Directorate (DG IV) used both case specific enforcement and anti-trust law to challenge any residual barriers to the development of a single European telecom market. The Commission could bring the member states before the European Court of Justice for failing to implement, apply or enforce the liberalization and harmonization directives. The Commission conducted periodic reviews on the implementation of the European telecom policies in all of the member states. The 1997 review found significant violations including long delays in granting licenses, the incomplete liberalization of alternative networks and excessively high interconnection charges.<sup>35</sup> The Commission initiated formal infringement proceedings against eight member states to force the national governments to adopt certain policy measures or to amend existing national legislation to conform with European law.

The Commission also responded to third party complaints of anti-competitive behavior against the national government. For example, the new entrants in the German telecom market submitted complaints against the German government for allowing Deutsche Telekom to offer preferential tariffs for business customers which they believed constituted an abuse of monopoly power. After requesting an independent study, the

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Commission also issued a series of reports exploring the impact of multimedia technologies on issues such as employment, democracy and education. Interviews, Brussels, 1998.

<sup>35</sup> European Commissions' reports on the implementation of the telecommunications regulatory package (1-3). These discrepancies have been confirmed in independent studies of the national telecom markets such as Prosperetti, Luigi, and Michela Cimattoribus. 1997. *Andante Ma Non Troppo : Telecommunications Liberalization Trends in Continental Europe*.



Commission ordered Deutsche Telekom to change its rate structure.<sup>36</sup> The new entrants in the German telecom market found that making a complaint in Brussels put considerable political pressure on the national government to take a tougher stance toward Deutsche Telekom and adopt more pro-competitive policies.<sup>37</sup> In addition to forcing the offending government to comply with European law, the use of case specific enforcement created considerable pressure for harmonization across member states. When one member state was ordered to comply unilaterally with a European directive, that state exerted pressure for reciprocal action by other national governments which were also not in full compliance of the European rules.<sup>38</sup> The Commission vigorous use of competition law limited the ability of the member states to delay implementation of the EU telecom policies and maintain barriers to competition.

The Commission also used its strong anti-trust powers to push the national governments to eliminate barriers to competition and to guard against industry concentration in the national and European markets.<sup>39</sup> Invoking its powers under Articles 85 and 86 of the Treaty of Rome, DG IV reviewed several alliances in the telecom industry including BT and MCI's defunct Concert alliance, Unisource, Atlas, GlobalOne and MSG. The case of France Télécom and Deutsche Telekom's Atlas alliance demonstrated how the alliance review process increased the pressure on the national governments to accelerate market liberalization.<sup>40</sup> Through the Atlas venture, the two state-owned public telecom operators planned to offer customized international services

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<sup>36</sup> Interview, Germany 1997.

<sup>37</sup> Interview, Germany 1997.

<sup>38</sup> Schmidt, Susanne K. 1998. Commission Activism: Subsuming Telecommunications and Electricity under European Competition Law. *Journal of European Public Policy* 5 (1).

<sup>39</sup> Catinat, Michel. 1997. The Reform of the Telecommunication Regulatory Framework : The American and European Approaches. Harvard University: Conference on the Impact of the Internet on Communications Policy.

to large business users.<sup>41</sup> The partners also agreed to combine their packet-switched data networks. Competition Commissioner Karl Van Miert repeatedly expressed concern that this alliance between Europe's two largest operators would lead to excessive concentration in the European market.<sup>42</sup> Van Miert and others also feared that the limited competition in the former monopolists' domestic markets would give the alliance partners an unfair competitive advantage in other European markets. The French and German governments lobbied heavily on behalf of their national public operators claiming that the alliance was essential if the firms were to survive in the global marketplace. In its review the Commission took the global competitive arena into consideration; however, European policy makers insisted that they would not approve a global alliance at the price of a telecom cartel in Europe.<sup>43</sup> The Commission imposed several conditions on the alliance's approval. Notably, France Télécom and Deutsche Telekom would have to grant interconnection on non-discriminatory terms to Atlas and its competitors and make the services provided to Atlas such as leased lines available to its competitors on the same terms. Moreover the Commission demanded that the French and German governments liberalize alternative telecoms infrastructure on July 1, 1996.<sup>44</sup> Through the review process, the Commission pushed the French and German governments to accelerate liberalization and reduce barriers to competition in their national markets.

The Commission's review of the joint venture between Deutsche Telekom, the German media giants Bertelsmann and Kirch reveals how an alliance review can also

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<sup>40</sup> Commission decision of 17 July 1996, Case IV/35.337, *Atlas* OJ 239/23

<sup>41</sup> France Télécom and Deutsche Telekom subsequently entered into an alliance with the American operator Sprint which was known first as Phoenix and then GlobalOne.

<sup>42</sup> Interviews, Brussels 1996.

<sup>43</sup> Interviews, Brussels 1996.

<sup>44</sup> Larouche, Pierre. 1998. EC competition law and the convergence of the telecommunications and broadcasting sectors. *Telecommunications Policy* 22 (3).

affect the development of new market segments and telecom operators' ability to expand into different media. In 1994 these three powerful German firms announced a joint venture, Media Services Gesellschaft (MSG), to provide digital pay-TV in the domestic market. The joint venture received strong criticism in Germany and in Brussels because of the partners' dominant positions in related markets. Telekom held a legal monopoly over the German cable television network, while its partners both held strong position in the domestic television market, including pay-TV through their joint channel Premiere. The Commission blocked the joint venture on the grounds that first MSG would have a dominant position in the nascent market for digital pay-TV and second the deal would strengthen the partners' dominant positions in the markets for cable television and analog pay-TV.<sup>45</sup>

According to Commission officials, the European Union's strong anti-trust powers may play an increasingly important role in the telecom industry in the medium to long term.<sup>46</sup> As competitive markets mature, some industry experts predict that competition law will replace sector specific regulation.<sup>47</sup> Because the European competition law is very strong compared to that in many of the member states, a shift from sector specific regulation to competition law could boost the Commission's influence over the European telecom market.

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<sup>45</sup> Commission decision of 9 November 1994, Case IV/M.469, *MSG Media Service* OJ L 364/1. In 1995 the Commission also investigated on-line service providers including AOL Europe. The Commission's concern was that content and delivery be separated regardless of the links between content providers and on-line service providers.

<sup>46</sup> Interviews, Brussels 1998.

<sup>47</sup> See for example, Kneips, Gunter. 1997. Phasing out Sector Specific Regulation in Competitive Telecommunications. *Kyklos* 50.; Larouche, Pierre. 1998. EC competition law and the convergence of the telecommunications and broadcasting sectors. *Telecommunications Policy* 22 (3). also argues that competition law must evolve to deal with convergence, but that it is likely to pre-empt regulation.

***Subsidiarity and national regulatory policy***

Within this European policy framework, the national governments retained some discretion in the implementation of European telecom policies because of the principle of subsidiarity. The principle of subsidiarity was established in Article 3b of the Treaty of Rome which stated : "In all areas which do not fall within its exclusive competence, the Community shall take action, in accordance with the principle of subsidiarity, only in so far as the objectives of the proposed action cannot be sufficiently achieved by the Member States and can therefore, by reason of the scale effects of the proposed action, be better achieved by the Community. Any action by the Community shall not go beyond what is necessary to achieve the objectives of the Treaty."

The unsuccessful attempts to create a European regulatory authority (ERA) illustrates how subsidiarity limited the reach of the European telecom policy. Some members of the Commission including vice president Bangemann argued that a ERA would facilitate the development of pan-European telecom networks and services by issuing EU-wide licenses or setting tariffs.<sup>48</sup> Not tied to any one national institutional context, an ERA would be more independent and therefore more likely to stand up to the former national monopolists in many of which the state remained the majority shareholder. However, efforts to create a single European telecom regulator repeatedly failed as the national governments invoked the principle of subsidiarity to keep regulatory power in the hands of the national regulators.<sup>49</sup> The member states also rejected an earlier proposal to establish EU-wide licenses on the grounds that it violated the principle of subsidiarity. Under this mutual recognition scheme, licenses issued in one member

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<sup>48</sup> NERA study, High Level Group on the Information Society. 1994. Europe and the Global Information Society. Brussels: European Union.

state would have to conform to EU-wide licensing conditions and would then automatically be valid in all other member states.<sup>50</sup>

Similarly, the regulation of universal service shows how the member states retain considerable discretion over important regulatory decisions within the European guidelines.<sup>51</sup> According to European law, universal service constituted "a defined minimum set of services of specified quality which is available to all users independent of their geographical location and in light of specific national conditions at an affordable price." However, the scope of a minimum set of services, the definition of affordability, the costing methodologies and the specific finance mechanisms were all left to the member states' discretion. For example, the EU guidelines allowed three different funding mechanisms: no compensation mechanism if the financial burden is minimal; a national universal service fund; or a system of supplementary charges paid to the incumbent operator by the new entrants. This flexibility was designed to accommodate very different national approaches to universal service.<sup>52</sup> For example estimates of the cost of providing universal service ranged from zero to as much as eight percent of revenues.<sup>53</sup> Similarly, some member states such as the Netherlands wanted to include internet access to schools in the definition of universal service whereas others included

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<sup>49</sup> Interviews, Brussels 1995.

<sup>50</sup> Kiessling, T, and Y Blondeel. 1998. The EU regulatory framework in telecommunications. *Telecommunications Policy* 22 (7):571-592.

<sup>51</sup> Council Resolution concerning the Principles of Universal Service in the Telecommunications Sector 94/C48/0; Interconnection Directive, 1996 Full Competition Directive, Voice Telephony Directive Commission Communication on Universal Service for Telecommunications in the Perspective of a Fully Liberalized Environment COM(96)73; Communication on the Assessment Criteria for National Schemes for the Costing and Financing of Universal Service in Telecommunications and Guidelines for the Member States on the Operation of such Schemes COM(96)608

<sup>52</sup> Ecole Nationale d'Administration. 1996. Promotion Marc Bloch : Services Publics : Exception Francaise, Exigence Europeenne. Paris: Ecole Nationale d'Administration.

<sup>53</sup> www.analysys.com Kiessling, T, and Y Blondeel. 1998. The EU regulatory framework in telecommunications. *Telecommunications Policy* 22 (7):571-592.

only basic service in the universal service obligation.<sup>54</sup> Because they were flexible enough to accommodate these diverse conceptions of universal service, the European regulations allowed member states to adopt different universal service regimes.<sup>55</sup> As the case studies reveal, the universal service regimes in France, Germany and the UK differ significantly in terms of the scope of the obligation, the amount of compensation provided and the possibility of a new entrant providing universal service.<sup>56</sup>

### ***Conclusions***

The Commission's strong competition authority and the member states' commitment to European liberalization combined to create a strong European framework for opening the traditionally closed national telecom markets and harmonizing the differences across member states. The European policies did, however, allow the member states discretion in the implementation of the European directives particularly in the details of market regulation. Recognizing that divergent regulatory regimes could jeopardize the creation of a single market, the European policy makers argued that market mechanism and technology would help to eliminate differences among national markets that resulted from subsidiarity.<sup>57</sup> Indeed, the European single telecom policies and the technological and market pressures analyzed in the previous chapter together represent a serious threat to the national governments' power in the telecom industry and the viability of differences in national market structures.

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<sup>54</sup> Interviews, Brussels 1998.

<sup>55</sup> Rickford, Jonathan B. K. 1998. Change, politics and determinist economics in Europe. *Telecommunications Policy* 22 (6):471-482.

<sup>56</sup> See Chapters 4 to 6 and a summary of the different national regimes in Ch.7.

<sup>57</sup> Interviews, Brussels 1995.

### **European Market Liberalization Initiatives**

- 1987** Commission Green Paper on the Development of the Common Market for Telecommunications Services and Equipment
- 1988** Commission Directive opening competition in the market for terminal equipment
- 1989** Council Resolution accepting the progressive liberalization of telecommunications with the exception of basic voice telephony and public infrastructure
- 1990** Commission Directive liberalizing value added services
- 1992** Commission review of the European telecom industry
- 1993** Council Resolution to open all telecom services to competition by 1/1/98
- 1994** Council Resolution to liberalize telecom infrastructure by 1/1/98
- 1995** Commission Directive liberalizing alternative infrastructures by 7/1/98
- 1996** Commission Directive opening competition in mobile communications
- 1998** Effective date for the full liberalization of telecom services and infrastructure throughout the European Union with the exception of Greece, Ireland and Portugal

### **European Harmonization Directives**

- 1990** Open Network Provision (ONP) framework to ensure open and non-discriminatory access to public telecom networks
- 1992** Application of ONP to leased lines
- 1995** Application of ONP to voice telephony
- 1997** Interconnection with regard to ensuring universal service and interoperability through the application of the ONP principles
- 1997** Adaptation of the ONP framework to a competitive environment
- 1997** Common framework for general authorizations and individual licenses
- 1998** Amendment of ONP voice telephony for a competitive environment

### **European Commission Guidelines and Recommendations**

- 1996** Universal service and assessment criteria for its calculation and financing
- 1997** Interconnection pricing
- 1997** Security and Trust in Electronic Commerce
- 1998** Internet Telephony

## **PART II: LIBERALIZATION AND THE DEVELOPMENT OF COMPETITION IN THE EUROPEAN TELECOM MARKETS**

Against this backdrop of revolutionary technological and economic change and European integration, the case studies examine the development of the national telecom markets in France, Germany and the UK. The cases focus on how national policy makers and firms responded to the challenges of market liberalization and technological change. Did the introduction of competition into the national markets, the proliferation of players and technologies and the European single market policies push the national governments to adopt the similar regulatory regimes? Were governments able to do much more than creating awareness about the internet? Did the new competitors in the liberalized markets pursue similar entrance strategies and adopt the same approach to the internet and the growing markets for on-line services? And, if national regulations, internet policies and patterns of market entry did vary, were these differences significant in the marketplace? Can these differences persist over time?

Each case follows a similar structure. First, I examine the political process leading up to the liberalization of the national markets and the privatization of the public telecom operator. This analysis explores how the structure of interests in the national telecom industry and powerful ideas about competition shaped the reform process and set the stage for the national regulatory decisions, internet policies and entry patterns. The cases then provide a detailed analysis of the national telecom regulations in three important areas: the independence of the national regulatory authority, the terms and pricing of interconnection and the universal service obligations. I selected these three components of the regulatory regime based both on interviews with regulators, senior



executives and regulatory experts in the European telcos and economists and on a review of the economic literature on telecom regulation. All of these sources confirmed that the independence of the regulator, interconnection and universal service had significant effects on the development of competition.

The cases then explore the national and regional policies to promote the development of the internet and new on-line services. I focus on how governments tried to act as lead users by wiring schools and putting public information and services on-line and how the telecom operators participate in these initiatives. While these policies aimed to stimulate demand, the partners that the government chooses could also confer commercial advantages on certain firms. This section also looks at the impact of national policies to regulate the internet and on-line services.

Finally, the cases provide an overview of who the players are in the national telecom market. In each national markets several large firms decided to enter the market before the regulatory framework was in place and participated in its formulation. I examine the entry strategies of these firms with particular attention to how their core businesses and media holdings affect their approach to new internet technologies.

Both the French and German telecom markets opened to competition on January 1, 1998 in accordance with the EU telecom policy. These cases provide a direct comparison of how governments and firms responded to the same political, economic and technological changes. Since the UK opened its national telecom market to competition more than fifteen years earlier, the British case highlights the importance of regulation, technology policy and patterns of market entry over time.

## CHAPTER 4

### THE FRENCH TELECOM MARKET

When the French market opened to competition on January 1, 1998, it seemed as if another battle for French exceptionalism had been lost. After nearly ten years of confrontation and debate colored by fierce economic nationalism, the French government tore down the closely held public monopoly over public voice telephony and infrastructure. Powerful French industrial groups and foreign telecom operators lined up to compete with the incumbent operator promising residential and business customers lower prices and innovative service packages. After several politically embarrassing retreats by the preceding conservative governments, the Socialist government of Lionel Jospin privatized 25% of the national champion France Télécom for FFr 40 billion in 1997 and the next year sold a second stake reducing the state's share to 62%. This second tranche included a 2% share swap with the Deutsche Telekom to cement the two giants' international alliance, Global One. Facing competition in its domestic market, the former PTO announced that by 2006, international activities would constitute one third of its total revenues.<sup>1</sup> The Socialist Prime Minister Lionel Jospin launched a campaign to bring France into the information society that at first blush appeared to be very similar to the American NII, placing the bulk of investments and technological choices in the hands of the private sector. French *internautes*<sup>2</sup> could log on to the Web using America On Line and check their bank balance at [www.bnpparibas.fr](http://www.bnpparibas.fr) before purchasing a book from [www.amazon.com](http://www.amazon.com).

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<sup>1</sup> Vincent Boland, "France Télécom relies on alliance for growth" *Financial Times* 17 November 1998.

<sup>2</sup> *Internautes* is a French term for internet users. The internet is commonly referred to as l'Internet or la Toile (the Web).

Liberalization, internationalization and technological change clearly had an enormous impact on the French telecom industry. Yet, when the French telecom market opened to competition on January 1, 1998, the market developed in ways not predicted or explained by European policy, market imperatives or technological innovation alone. Indeed, within the European constraints, the French regulatory policy, industrial policy initiatives and pattern of market entry all limited the development of competition and investments in new technology. The French regulatory framework was designed to moderate competition and tended to protect France Télécom from aggressive price based competition. Because regulatory power was shared between the new regulatory authority, the the Autorité de Reglementation des Télécommunications (ART) and the Ministry of Industry, there remained a strong political influence over the sector and a strong interest in universal access, uniform prices throughout the territory and safeguarding employment. Moreover, Jospin's information society initiatives went well beyond creating awareness and used the state's considerable resources to promote investment, stimulate demand and boost the competitiveness of national firms. The primary competitors to France Télécom were the French water utilities and cable operators, Vivendi and Suez-Lyonnaise and the industrial group Bouygues. Many saw that these three politically powerful national firms were positioning themselves for a cozy oligopoly and some analysts questioned whether there really was competition in the liberalized French market at all.

To understand the French decisions on regulation, industrial policy and market entry and the slow development of the internet, this chapter first looks back at the liberalization process from which they emerged. This case study then examines in detail

the specific French regulations, industrial policy initiatives and firm strategies and analyzes their impact on the development of competition and investments in new technologies in the liberalized market.

### ***LIBERALIZATION AND PRIVATIZATION*** ***State-led reform***

After nearly a decade of fierce debate, the French telecom market was opened to competition on January 1, 1998. During the long, conflict ridden liberalization process, both the major proponents and opponents of reform came from within the state and the national public telecom operator. As a growing number of policy makers and senior managers accepted that liberalization was necessary to allow France Télécom to compete in the international arena, the French market was gradually opened to competition. The reforms were designed to allow France Télécom to adjust to the introduction of competition in its domestic market. At the conclusion of this highly centralized reform process, both the government and France Télécom retained significant power over the development of the French telecom market even after the legal monopoly ended.

There was a strong tradition of active state leadership in the French telecom industry. Under the monopoly regime, French telecom policy was highly centralized and closely linked to the *dirigiste* state's broader economic policy and national planning. The national monopoly operator, la Direction Générale des Télécommunications (DGT) was a public administration under the tutelage of the Ministère des Postes, Télégraphes et Télécommunications. In contrast to its German and British counterparts, the French DGT maintained very close relationships not only with the Telecom Ministry but also with the

rest of the French bureaucracy and the Elysée presidential palace.<sup>3</sup> The DGT participated actively in the powerful French state's economic policy and its activist strategy of industrial modernization.<sup>4</sup> French telecom policy during the Fifth Republic was a quintessential example of the state's top-down approach to technological development and by many accounts a triumph for the *dirigiste* French state.

In the early 1970s, France had an antiquated telecom network, low levels of telephone density, very poor quality of service and waiting periods of up to two years for basic telephone service installation.<sup>5</sup> Whereas the British government embraced market liberalization as a way to modernize the sector, French policy makers adopted a state-led, *Colbertiste* industrial policy to respond to the *crise de la téléphone*.<sup>6</sup> During the Presidency of Giscard d'Estaing, the VIIth national plan (1976-1980) identified telecoms as a "Priority Action Programme" and allocated FFfr 100 billion to modernize the sector. To execute this massive state-led infrastructure development project, the DGT effectively utilized the state's procurement powers, financial resources and the technological expertise from the public research labs, the Centre National d'Etudes des

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<sup>3</sup> For discussions of the relationship between the PTO and the state see Cohen, Elie. 1990. *L'État et le secteur des Télécommunications : du "Mercantilisme High Tech" à l'Institution du Marché*. In *L'Année Sociologique*. Paris: Presse Universitaires de France. or Dang Nguyen, Godefroy. 1998. *Telecommunications in France*. In *European Telecommunications Organizations*, edited by J. Foreman-Peck and J. Müller. Baden-Baden: Nomos.

<sup>4</sup> For analyses of French state's activist approach to industrial modernization and technological development see Shonfield, Andrew. 1965. *Modern Capitalism : The Changing Balance of Public and Private Power*. London: Oxford University Press., Hall, Peter. 1986. *Governing the Economy : The Politics of State Intervention in Britain and France*. New York: Oxford University Press. For a broader analysis of the strength of the French state see Peter Katzenstein, *Between Power and Plenty* (Madison: WI: University of Wisconsin Press, 1978).

<sup>5</sup> For a comprehensive history of the French telecom industry see Bertho, Catherine. 1982. *Télégraphes et téléphones*. Paris: Livre de Poche. or Bertho-Lavenir, Catherine, ed. 1991. *L'État et les télécommunications en France et à l'étranger 1837-1987*. Genève: Librairie Droz.

<sup>6</sup> Dating back to the reign of Louis XIV and Colbert's strategy of the arsenal, the French statist or *dirigiste* approach to industrial development were integral to de Gualle's national planning and Mitterrand's socialist experiment. Permeating both the political right and left, *dirigisme* proved to be remarkably resilient under the more economically liberal governments of Pompidou and Giscard d'Estaing. See Levy, Jonah D. 1999.

Télécommunications (CNET). This state-led catch-up or *rattrapage* succeeded in creating a modern network with one of the highest levels of digitalization in the world and reducing the average waiting period for a new line to two weeks.<sup>7</sup>

In 1978, at the time when the British government was considering liberalizing telecommunications, the French government launched another top-down technology project, the Plan Télématique. Based on the influential Nora-Minc Report, this *grand projet* aimed at making France the international leader in telematic networks and services.<sup>8</sup> The Plan's most famous progeny, the Minitel videotext system, serves as a fascinating example of centralized, state-led technological diffusion and the use of public policy to create a market. To stimulate demand and reach the maximum number of users possible, the DGT distributed Minitel terminals to all French households free of charge and established an electronic directory to replace the cumbersome phone books. The DGT also introduced an innovative *kiosque* system which linked the Minitel users to thousands of small private service providers and offered secure centralized billing through the public telephone operator.<sup>9</sup> Although it was never exported, Minitel was quite successful in France in stark contrast to the German Bildschirmtext and the British Prestel systems.<sup>10</sup> By 1998, Minitel boasted 15 million users, 25,000 private service

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*Tocqueville's Revenge : State, Society and Economy in Contemporary France.* Cambridge: Harvard University Press.

<sup>7</sup> For a detailed analysis of this and other French *grands projets* in the telecommunications sector see Cohen, Elie. 1992. *Le Colbertisme "High Tech": Economie des Télécom et du Grand Projet.* Paris: Hachette. and Salomon, Jean-Jacques. 1986. *Le Gaulois, le Cow-boy et le Samourai: La Politique Française de la Technologie.* Paris: Economica.

<sup>8</sup> Nora, Simon, and Alain Minc. 1978. *L'Informatisation de la Société.* Paris: La Documentation Française.

<sup>9</sup> For in-depth analyses of the Minitel and the Plan Télématique see Cohen, Elie. 1992. *Le Colbertisme "High Tech": Economie des Télécom et du Grand Projet.* Paris: Hachette.; Marchand, Marie. 1987. *La Grande Aventure du Minitel.* Paris: Larousse.

<sup>10</sup> As discussed in the case studies, the German and British teletex systems did not enjoy the same state support as Minitel and failed to attract users and service providers in the market without such state intervention. For interesting comparative studies of the three experiments see Mayntz, Renate, and Volker Schneider. 1988. *The Dynamics of System Development in a Comparative Perspective : Interactive*

providers and estimated FFr 9 billion in revenues. After the execution of these two projects, the DGT wielded a great deal of power both in the national market and in the French political process.<sup>11</sup>

In 1986 the conservative government of Prime Minister Jacques Chirac launched the first serious efforts to liberalize the French telecom market. Influenced by the market oriented policies of Thatcher and Reagan, Telecom Minister Gérard Longuet, Minister for Industry Alain Madelin and a small group of supporters advocated telecom reform. These liberal policy makers argued that the state should step back and allow entrepreneurs to make strategic decisions about day to day operations and investments in new technologies.<sup>12</sup> However, both in their rhetoric and their policy proposals, the reformers within the French government stopped well short of the aggressive anglo-saxon style of market liberalization. Longuet and his team advocated organizational reform and limited market liberalization, but remained committed to the long standing monopoly on infrastructure and basic voice telephony.<sup>13</sup>

In 1987 Chirac's government introduced competition into the market for value added network services subject to tight restrictions on the use of leased lines designed to protect the DGT's monopoly on voice telephony. To stimulate the underdeveloped market for mobile communications, Longuet also used his authority under existing law to

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Vidoetex in Germany, France and Britain. In *The Development of Large Technical Systems*, edited by R. Mayntz and T. P. Hughes. Frankfurt: Campus.; Schneider, Volker, and Thierry Vedel. 1991. *The Dynamics of Videotex Development in Britain, France and Germany : A Cross National Comparison*. *European Journal of Communication* 6:187-212.; Bouwman, Harry, and Mads Christoffersen, eds. 1992. *Relaunching Videotex*. Dordrecht: Kluwer Academic Publishers..

<sup>11</sup> Cawson, Alan, Kevin Morgan, Douglas Webber, Peter Holmes, and Anne Stevens. 1990. *Hostile Brothers : Competition and Closure in the European Electronics Industry*. Oxford: Clarendon Press.

<sup>12</sup> Interviews Paris 1996 and 1998.

<sup>13</sup> It was not until 1993 that there was any serious discussion of infrastructure liberalization among French policy makers. Longuet report 1994. press See also Chamoux, Jean-Pierre. 1993. *Télécom : la fin des privilèges*. Paris: Presses Universitaires de France. Thatcher, Mark. 1994. *Regulatory Reform in Britain and*

license a second mobile operator, SFR. Later that same year Longuet proposed legislation that would separate the postal and telecom services; however, such an organization change encountered strong opposition from some factions within the DGT and from the unions who viewed the proposed organizational reform as a direct attack on *les services publiques*.

Questioning the need for change, many within the DGT bureaucracy contended that the public monopoly provided French users with a state of the art digital network, high quality service and innovations such as Minitel.<sup>14</sup> Moreover, defenders of the status quo argued that liberalization was antithetical to the strong tradition of public service at the DGT.<sup>15</sup> The French notion of public service extended well beyond the provision of universal service and uniform tariffs to include regional development, the support of declining industries and research.<sup>16</sup> Many policy makers argued that these important national interests would not be served in a competitive market which maximized profits with little regard for broader economic and social objectives.

The opposition to telecom liberalization within the French government also reflected decision makers' concerns about the impact of competition on French industry.<sup>17</sup> Whereas Thatcher insisted that domestic competition would increase the competitiveness of British Telecom, many French policy makers argued that the national public

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France : organizational structure and the extension of competition. *Journal of European Public Policy* 1 (31):441-464.

<sup>14</sup> Longuet, Gérard. 1988. *Télécoms : La conquête de nouveaux espaces*. Paris: Dunod. Vedel, Thierry. 1988. La déréglementation des télécommunications en France: Politique et Jeu Politique. In *Les Déréglementations*, edited by I. F. d. S. Politiques. Paris: Economica.

<sup>15</sup> Interviews, Paris 1996 and 1998. Longuet, Gérard. 1988. *Télécoms : La conquête de nouveaux espaces*. Paris: Dunod.

<sup>16</sup> Ecole Nationale d'Administration. 1996. Services Publics Comparés: Exception Française, Exigence Européenne. Jean Paul Simon rapport de la Documentation Française. (verifier)

<sup>17</sup> Shonfield provides an excellent discussion of French ideas about the economy and the pervasive skepticism about free market competition. Shonfield, Andrew. 1965. *Modern Capitalism : The Changing Balance of Public and Private Power*. London: Oxford University Press.



operator's competitiveness at home or abroad depended on domestic revenues and adequate time to adjust to the changing international and technological environment.<sup>18</sup> Some French political leaders also raised questions about the ability of the French equipment and computer industries to compete in an open market against their larger American rivals. As the former Director of the DGT, Dondoux stated : "If no problems of hegemony are involved, we are prepared to deregulate. But if we see that the only consequence of deregulation is to allow the American computer industry to make profits at the expense of the French industry then we regulate."<sup>19</sup> Like Dondoux, many policy makers from both sides of the political aisle resolved to limit liberalization in order to protect the national telecom industry.

At the same time, the telecom and postal unions vehemently opposed any major change to the existing PTT regime. Citing the example of BT where workforce reductions exceeded 100,000, the unions feared that any major reforms would jeopardize their members' jobs and advantageous civil servant status. In fact, according to several participants in the reform process, the primary reason why Chirac decided not to pursue Longuet's proposals for liberalization was to avoid antagonizing the unions before the 1988 presidential election and precipitating a repeat of the politically damaging 1974 postal strike during his first tenure as Prime Minister.<sup>20</sup>

After Chirac lost the Presidential election, the Socialist government slowed, but did not abandon telecom liberalization. The new Telecom Minister Quilès launched an awareness campaign to win support within DGT and the unions for organizational

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<sup>18</sup> Larcher, Gérard. 1996. France Télécom face à ses défis et les réponses à préparer. Paris: La Commission des Affaires Economiques et du Plan, Le Sénat.

reform. At the government's request, Hubert Prévot, a close friend of Prime Minister Rocard and former trade union leader, organized a series of public debates on the future of the French postal and telecommunications services.<sup>21</sup> Prévot succeeded in calming the employees' fears about losing their protected civil servant status and persuading the PTT's workforce that some reform was necessary to respond to the changes in the international marketplace. His main message was that, "Your future will be different from your past; but you will remain civil servants as long as you wish."<sup>22</sup> By asserting its commitment to public service and offering employees an advantageous new wage scheme, Rocard's socialist government was able to adopt the organizational reforms that their liberal predecessors had been forced to abandon. In July 1990, the government changed the statute of La Poste and France Télécom from public administrations to publicly owned companies. A second bill in December 1990 separated the regulatory and operational functions in the telecom industry and established broad regulatory guidelines for the competitive and monopolistic market segments.<sup>23</sup>

The reforms enacted by the Socialist government responded to an important shift in the interests of the senior management at France Télécom. Senior managers were increasingly frustrated by the heavy state intervention and forced contributions to the

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<sup>19</sup> Guy de Jonquieres "The Future looks less certain" *Financial Times* 1 February 1985 as quoted by Morgan, Kevin, and Douglas Webber. 1986. *Divergent Paths : Political Strategies for Telecommunications in Britain, France and West Germany*. *West European Politics* (October):56-79.

<sup>20</sup> The Postal and telecom services combined employed more than 500,000. Interviews, Paris 1998.

<sup>21</sup> Huret, Eric. 1994. *Restructuring Telecommunications: The French Experience*. In *Implementing Reforms in the Telecommunications Sector*, edited by B. Wellenius and P. A. Stern. Washington: The World Bank.

<sup>22</sup> Translated by the author from Prévot, Hubert. 1988. *Le Débat Public*. Paris: Ministère des Postes, des Télécommunications et de l'Espace.

<sup>23</sup> Garnier, Dominique. 1994. *The Strategic Role of Regulation in France*. In *Implementing Reforms in the Telecommunications Sector*, edited by B. Wellenius and P. A. Stern. Washington: The World Bank.

national budget.<sup>24</sup> By the mid 1980s the profitable telecom operator contributed as much as 20% of its turn over to the general budget.<sup>25</sup> At the government's bidding, the public telecom operator also took a major stake in the ailing computer company, Bull and invested in several other French firms. Senior managers complained that these weighty political obligations were detrimental to the operator's domestic performance and its international competitiveness. In the late 1980s France Télécom invested in several foreign markets, including Argentina, Mexico and Poland. The France Télécom's management argued that its international expansion and the growing demand for customized international business service required greater flexibility and managerial autonomy.<sup>26</sup> They also recognized that some degree of competition in the domestic market was necessary to meet foreign demands for reciprocal market opening and to comply with the European single market policies.<sup>27</sup> The progressive opening of the French telecom market was the result neither of a full scale retreat by the state nor a Thatcherite embrace of the market.<sup>28</sup> The arguments for telecom reform concentrated heavily on the changing international environment and there were very few decision makers who argued that free markets produced optimal outcomes. Furthermore, policy makers demonstrated a willingness to curtail liberalization in order to protect national

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<sup>24</sup> Chamoux, Jean-Pierre. 1993. *Télécom : la fin des privilèges*. Paris: Presses Universitaires de France.  
 Thatcher, Mark. 1994. Regulatory Reform in Britain and France : organizational structure and the extension of competition. *Journal of European Public Policy* 1 (31):441-464.

<sup>25</sup> From 1985 to 1993 France Télécom contributed an average of FF15.1 billion to the Budget de l'Etat.  
 "France Télécom : le vent de la concurrence" *Le Figaro* 28 May 1996.

<sup>26</sup> Insead. 1994. Alcatel, France Télécom and the French Government. Fontainebleau: Insead. Cawson, Alan, Kevin Morgan, Douglas Webber, Peter Holmes, and Anne Stevens. 1990. *Hostile Brothers : Competition and Closure in the European Electronics Industry*. Oxford: Clarendon Press.

<sup>27</sup> Tronc, Jean-Noël. 1996. La libéralisation des télécommunications en France et dans les pays occidentaux. *Regards sur l'actualité* (September-October). Huret, Eric. 1994. Restructuring Telecommunications: The French Experience. In *Implementing Reforms in the Telecommunications Sector*, edited by B. Wellenius and P. A. Stern. Washington: The World Bank.

<sup>28</sup> Interviews, Paris 1998. See also Tronc, Jean-Noël. 1996. La libéralisation des télécommunications en France et dans les pays occidentaux. *Regards sur l'actualité* (September-October).

industry and the French tradition of public service. Both the slow pace of liberalization and regulations such as the tight restrictions on the use of leased lines were designed to protect France Télécom and allow the incumbent to adjust to the increasingly competitive international markets.<sup>29</sup> At the same time, the Socialist government pledged to defend the national operator's broad obligation to public service and maintain its public ownership.

Under the leadership of Marcel Roulet, the management of France Télécom continued to push for greater independence and flexibility.<sup>30</sup> France Télécom's senior management once again argued that liberalization was necessary if the French national champion were to play a leading role on the global stage.<sup>31</sup> They warned policy makers that the trend toward liberalization would continue and that France Télécom must be given the flexibility to prepare itself to compete or risk being marginalized.<sup>32</sup> Faced with continued political intervention, Roulet pressured the government to privatize France Télécom. There was no support within the government for creating a private monopolist, so it became clear to France Télécom's management that some degree of competition was a de facto prerequisite for privatization.<sup>33</sup>

By 1993 a majority of policy makers from the left and the right supported France Télécom's position that market liberalization was necessary to ensure the international

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<sup>29</sup> For a detailed discussion of the differences between the French and British approach to telecom liberalization see Thatcher, Mark. 1994. Regulatory Reform in Britain and France : organizational structure and the extension of competition. *Journal of European Public Policy* 1 (31):441-464.

<sup>30</sup> FT's contrat du plan with the government included significant political obligations. The Treasury had control over investments.

<sup>31</sup> France Télécom had to demonstrate that it faced a certain degree of competition in its domestic market in order to comply with foreign demands for reciprocal market access and to satisfy the rigorous EU review of its planned alliance with Deutsche Telekom. Interviews, Paris 1996 and 1998; Brussels 1995 and 1996.

<sup>32</sup> Huret, Eric. 1994. Restructuring Telecommunications: The French Experience. In *Implementing Reforms in the Telecommunications Sector*, edited by B. Wellenius and P. A. Stern. Washington: The World Bank. Huret was a high ranking official at the DGT.

<sup>33</sup> Interviews, Paris 1998.

competitiveness of France Télécom. The French government voted for the European directives to liberalize all telecom services and infrastructure by January 1, 1998 and then started to draft a regulatory framework to govern competition in the national market.

Within the European guidelines, the government tried to strike its own balance between competition and public service. As the 1995 government proposal for establishing a new regulatory framework stated, "The ambition of this reform is to reconcile opening of the market to competition in order to improve the competitiveness of our economy with reinforcing a quality of public service that offers the greatest benefit to users."<sup>34</sup>

Throughout the debates, policy makers stressed the importance of protecting jobs and allowing FT to maintain sufficient revenues to invest in new technology and compete in international markets. As discussed in greater detail below, the telecom reform act did indeed create a regulatory regime that favored moderate competition and gave FT a privileged position as public service operator.

With the government locked into the European deadline of January 1, 1998 for allowing competition in the national telecom market, the opposition to telecom reform centered on the privatization of France Télécom. As Chirac told François Fillon when he became Telecom minister in 1995 "You have in your hands a live grenade!"<sup>35</sup>

Conservative policy makers favored partial privatization on the grounds that it would allow the national operator to strength its international alliances through stock swaps.<sup>36</sup>

The sale of the world's fifth largest telecom operator would also provide the state with

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<sup>34</sup> Ministère des Technologies de l'Information et de la Poste, 1995. *De Nouvelles Règles du Jeu Pour les Télécommunications en France*. Paris: Ministère des Technologies de l'Information et de la Poste.

<sup>35</sup> Thierry Gadau "Quatre ans pour ouvrir le capital de FT" *La Tribune* 24 October 1997.

<sup>36</sup> The government had not forgotten Volvo's decision to abandon its alliance with Renault because of its concerns about government intervention at the state-owned French auto maker.

much needed revenues to ease the growing public sector deficit.<sup>37</sup> However, the attempts to privatize France Télécom by conservative Prime Ministers Edouard Balladur and Alain Juppé encountered powerful opposition from the unions.

Promising to fight all reform and protect jobs with any means necessary, two radical leftist unions, the CGT and the new SUD<sup>38</sup> quickly grew to represent the majority of the work force at the state-owned operator. Under these unions' leadership, 75% of France Télécom employees went on strike in October 1993 to protest privatization and try to protect their jobs and their privileged civil service status. A second massive strike in 1995 served as a warning to the new Telecom Minister Fillon that the unions would continue to fight privatization and protect their members' jobs. With unemployment at 12%, the unions' fears about the impact of competition on jobs resonated loudly in the political climate of the mid-1990s. Political discourse, the press and public opinion polls revealed a deep suspicion of globalization and free market competition on the part of many French leaders and citizens.<sup>39</sup> Ironically, Prime Minister Balladur's plans to privatize FT were attacked by a strong anti-market sentiment that he himself expressed:

Can we (Europeans) take it for granted that we will remain sufficient leaders in a sufficient number of sectors to survive -- in the face of countries with populations infinitely larger than ours and with levels of social protection infinitely smaller? I say we should leave this to the market, but only up to a certain point. What is the market? It is the law of the jungle, the law of nature. And what is civilization? It is the struggle against nature."<sup>40</sup>

<sup>37</sup> In 1995 the deficit was expected to exceed FFfr 300 billion. John Ridding and Alan Cane "Policy switch threatens FT connections" *Financial Times* 13 July 1995.

<sup>38</sup> SUD (Syndicat Unité et Démocratie) was a spin off of the national Trotskiste CFDT union and was established at France Télécom specifically to fight privatization.

<sup>39</sup> For an analysis of the resurgence of protectionism in France see Berger, Suzanne. 1995. *The Coming Protectionism: Trade and Identity in France*. In *Remaking the Hexagon: The New France in the New Europe*, edited by G. Flynn. Boulder: Westview Press.

<sup>40</sup> Martine Wolf, "A fortress would be no defense" *Financial Times* 15 April 1994 (21).

This skepticism about the legitimacy of market outcomes figured prominently in the debates over telecom liberalization and privatization. Many in the government and the press questioned the ability of France Télécom to survive in a competitive jungle dominated by giants like AT&T and BT and a new generation of predators such as WorldCom and Colt. During the debates over telecom reform in the National Assembly in June 1996, the Socialists and many economically conservative members of the right attacked privatization as unjustified and dangerous.<sup>41</sup>

A little over a year later, the Socialist government of Lionel Jospin made a remarkable turn around and announced its intention to open the capital of France Télécom. Jospin's pragmatic decision to proceed with privatization reflected a general agreement among political leaders and France Télécom's management that France Télécom needed greater flexibility to compete not only in the liberalized domestic market, but in international markets as well. As the Union des cadres dirigeant de France Télécom (UDFT) explained : "It would be disastrous not to give France Télécom the means to face competition. Opening its capital is one of these means. Privatization will offer much greater flexibility to form alliances, contribute to more transparent management and guarantee future jobs."<sup>42</sup> Jospin was able to reach an agreement with the unions that allowed his government to sell a minority stake in France Télécom in exchange for significant concessions. The Socialist government promised to retain FT's public service role and the civil servant status of its workforce and to keep 51% of France

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<sup>41</sup> Larcher, Gérard. 1996. *France Télécom face à ses défis et les réponses à préparer*. Paris: La Commission des Affaires Economiques et du Plan, Le Sénat. Le Monde Editorial 6/96 La Tribune

<sup>42</sup> "Les cadres de France Télécom pour l'ouverture du capital" Le Monde 7 June 1997

Télécom in the public sector indefinitely.<sup>43</sup> A symbolic strike against privatization called by the SUD and CGT unions in September 1997 received little support and the battle was over. In October 1997, the French government sold 25% of France Télécom for nearly FFr 40 billion. At the end of this centralized liberalization and privatization process, the state and the incumbent operator retained considerable influence over telecom policy and the development of competition in the national market.

### ***REGULATION IN THE LIBERALIZED MARKET***

The French loi de réglementation des télécommunications of July 26, 1996 and several complementary ordinances established the regulatory framework within which competition would develop in the French telecom market. As policy makers debated the telecom law, they tried to strike a balance between allowing fair competition to develop, promoting investments, safeguarding employment, maintaining public service and ensuring France Télécom's international competitiveness.<sup>44</sup> Several senior policy makers including, the conservative Telecom Minister François Fillon and the socialist Minister of Industry Christian Pierret stated that the French regulatory regime was designed to allow some competition to develop, but also to allow France Télécom to maintain sufficient revenues to invest in new technologies and expand into foreign markets.<sup>45</sup> Pierret and others warned that the rapid development of price competition experienced in Britain and

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<sup>43</sup> Jospin managed to privatize more state enterprises than the previous Juppé government. Graham, Robert "Dose of realism for France" Financial Times 17 August 1998.

<sup>44</sup> These different political goals were weighed in parliamentary debates and in policy documents such as Ministère des Technologies de l'Information et de la Poste. 1995. *De Nouvelles Règles du Jeu Pour les Télécommunications en France*. Paris: Ministère des Technologies de l'Information et de la Poste, and Ministre délégué à la poste et aux télécommunications et à l'espace. 1996. *Projet de Loi de réglementation des télécommunications*. Paris: République Française..

<sup>45</sup> "Interview with François Fillon, le ministre délégué à la Poste, aux télécommunications et à l'espace : le gouvernement veut installer la concurrence sans affaiblir France Télécom" Le Monde 6 March 1997. "Interview : François Fillon s'engage à déreglementer en douceur" La Tribune 17 October 1995. "Christian Pierret plaide pour une concurrence "équilibrée et saine" La Tribune 22 December 1997. "Interview : Jean-



the United States could have adverse effects on investments, employment and universal service. What emerged from these policy discussions was a regulatory regime limited competition and maintained the power of both the state and France Télécom in the liberalized market. With the support of the government, France Télécom's was able to win much more regulatory protection than either Deutsche Telekom or British Telecom. For example, the French regulatory framework did not include any of the asymmetric regulations used in the UK to help the new entrants gain market share. Three characteristics of French regulatory regime were particularly important to the development of competition after January 1, 1998 : the independence of the regulatory agency, the interconnection regime and the universal service obligation. As the following analysis reveals, the French approach to these key regulatory issues tended to favor France Télécom and limit both competition and investment in new technologies in the liberalized telecom market.

### ***The Independence of the Regulator***

The Ministry of Industry's continued responsibility for telecom regulation and willingness to intervene in regulatory matters undermined the independence of the new French regulatory authority and raised serious concerns about the regulator's ability to promote competition in the French market. Under the terms of the 1996 telecoms law, regulatory authority was shared by the Autorité de Réglementation des Télécommunications (ART) and the Ministry for Industry. By statute the ART was an independent agency governed by a five member college with six year non renewable terms. The ART's formal responsibilities consisted of preparing license applications,

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Michel Hubert." *Les Echos* 5 may 1997 "Le développement de la compétitivité et l'investissement dans de nouvelles infrastructures sont un des objectifs de la loi."

approving the dominant operators' interconnection catalogue, advising the government on the universal service obligation, allocating scarce resources including numbers and frequencies and mediating disputes.

Independent agencies were uncommon in the French administrative system and viewed with suspicion by many. As Telecom Minister, François Fillion who himself favored the creation of an independent regulator said, "We [the French] do not like independent authorities. We think that it is up to the state to look after regulation."<sup>46</sup> In political debates, many policy makers argued that the state could weigh social, political and economic concerns whereas an independent regulator would focus exclusively on competition and economic efficiency with no regard for France's broader national interest.<sup>47</sup> As a result, the 1996 Telecom law foresaw considerable checks on regulator's power. While the ART was responsible for implementing economic regulations and conducting cost calculations, the Ministry of Industry maintained broad authority over issues of public interest including universal service and consumer pricing. For example, the regulator designed the economic models to calculate the cost of providing universal service, but the Ministry set the cost with no obligation to follow the regulator's recommendations. The Ministry also had the power to prepare regulatory laws and decrees, oversee France Télécom and participate in international negotiations. In practice, this division of labor was very ambiguous since nearly all economic decisions had political implications and vice versa.<sup>48</sup> For example, uniform tariffs satisfy a political goal of ensuring that urban and rural consumers enjoy the same prices for telecom services. At the same time, uniform tariffs constrain operators' economic pricing

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<sup>46</sup> David Owen, "The key to credibility" FT Telecoms Survey Financial Times 11 June 1997.

<sup>47</sup> Interviews Paris, 1996 and 1998.

decisions and may keep prices on high traffic routes artificially high. In fact, the Ministry could intervene in virtually any regulatory decision in order to protect universal service, promote new technologies or safeguard employment.

In March 1998 the Ministry did in fact overrule the regulator's decisions blocking France Télécom's preferential tariffs for internet in school.<sup>49</sup> France Télécom offered schools a deeply discounted rate of FFr 5,800 per year for ten hours of internet access a day for ten computers. It would, however, cost a competitor such as Cegetel FF 16,000 to provide the same service because of the interconnection charges the operator would have to pay to use France Télécom's network. When the new entrants in the telecom market brought a formal complaint against France Télécom, the regulator ruled that the preferential rates constituted an abuse of France Télécom's local loop monopoly. If France Télécom wanted to offer such low rates to schools, then to level the playing field the incumbent would also have to offer a preferential interconnection rate to its competitors for the provision of internet service in schools and public establishments.<sup>50</sup> Jospin's government quickly overruled the ART and allowed France Télécom to offer its discounted internet service to schools without lowering its interconnection rates. According to a high ranking government official, France could not afford to wait two years until real competition developed to get its schools on line. With a de facto monopoly in the local loop and a commitment to public service, France Télécom was in a unique position to offer internet access to schools and should be encouraged to do so despite the adverse effects on the development of competition.<sup>51</sup> This decision set a

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<sup>48</sup> Lasserre, Bruno. 1997. *L'Autorité de régulation des télécommunications. L'Actualité juridique.*

<sup>49</sup> ART decisions December 23, 1997 and March 11, 1998. [www.art-telecom.fr](http://www.art-telecom.fr)

<sup>50</sup> "France Télécom va accorder aux écoles des tarifs préférentiels" *Le Monde* 22 March 1998

<sup>51</sup> Interviews, Paris 1998.

dangerous precedent that the government could intervene in the regulatory regime to limit competition and that France Télécom's public service mission could be invoked to justify an abuse of its market power.

The Ministry's power over regulatory policy created a potentially serious conflict of interest. The French state was the majority share holder in France Télécom and approximately 90% of the former monopolist's employees retained their civil service status. Consequently, the state had a strong interest in protecting France Télécom's share price and workforce even if it meant higher prices to consumers. While this risk was played down in the press, many industry experts privately questioned whether the government would use its regulatory power to protect the public interest or France Télécom's interest and whether policy makers even distinguished between the two.<sup>52</sup> While this conflict of interest existed in other newly liberalized telecom markets, it was particularly worrying in the French case because the French government had both the statutory authority and the inclination to intervene in regulatory decisions. Indeed, the considerable political influence over regulatory policy created a great deal of instability and added to the risks of investing in the newly liberalized market.

The ART also appeared unwilling to assert its independence and challenge the state and the incumbent operator. When the Ministry overturned its decision on internet rates for schools, the ART did not appeal to the courts or the European Commission. In the face of political pressure and strong opposition from France Télécom, the regulator also failed to act decisively to resolve a critical conflict over the use of the national cable television network. As a consequence of the Plan Câble, Vivendi and Suez-Lyonnaise operated a significant portion of the cable television network, but France Télécom owned

the entire network. When Vivendi and Suez-Lyonnaise announced their intention to use the portion of the cable network that they operated to provide voice telephony and internet services in the liberalized telecom market, France Télécom protested to the government. The 1995 Loi sur les autoroutes de l'information permitted the cable operators and municipalities to conduct limited trials offering voice and internet over the cable network on a temporary basis. Yet, when the market opened to full competition on January 1, 1998, no permanent policy solution was in place and the cable operators were unable to offer voice and internet services beyond the limited trial areas. Vivendi and Suez-Lyonnaise appealed to the regulator, but after a series of complaints by the new entrants and appeals by France Télécom, the issue remained unresolved at the end of 1998.<sup>53</sup> While there had been some earlier jurisdictional disputes over the ART's authority to regulate the cable network,<sup>54</sup> the real issue appeared to be the regulator's unwillingness to challenge the government and the powerful incumbent. France Télécom insisted that it subsidized the cable television network and would under no circumstances subsidize its competitors' telephone or internet services.<sup>55</sup> The French government lobbied the European Commission to allow France Télécom and its alliance partner Deutsche Telekom to retain their cable interests. To strengthen their case in Brussels, the French government pressured the national regulator not to make any decision that would

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<sup>52</sup> Interviews, Paris and London 1998.

<sup>53</sup> "Lyonnaise Câble demand l'arbitrage de l'ART" La Tribune 30 December 1997.

<sup>54</sup> In 1995 when the Projet de loi sur les autoroutes de l'information was under discussion, the CSA expressed concern that the Telecom Ministry was infringing on its authority to regulate the cable network and all audiovisual communications including those delivered on the internet. However, by 1997, when the ART reviewed the issue of internet and telephony on cable, the CSA raised no objections. Rather, it was France Télécom's President Michel Bon contested the authority of the ART to regulate the internet "Le CSA veut pouvoir contrôler les autoroutes de l'information" Le Monde 19 October 1995. Avis déposé par le CSA au Secrétaire de l'Etat "FT conteste les compétences de l'ART sur Internet." La Tribune 28 Mai 1997

<sup>55</sup> France Télécom spokesman La Tribune 28/5/97 According to France Télécom, it spent FF 25 billion on the cable network and received merely FF 325 mn a year from the private operators.

suggest that France Télécom was using its ownership of the cable network to squelch competition.<sup>56</sup> The ART's failure to resolve this dispute over the usage of the cable network effectively blocked an alternative means of entry into the telecom market a year after what was supposed to be full market liberalization. Moreover, the apparent unwillingness of the regulator to stand up to France Télécom threatened to undermine the development of competition. The ART played an important role as an intermediary between the incumbent operator and the new entrants, when for example making very difficult cost evaluations.

Finally, it was unclear whether the ART had the authority to make independent decisions concerning new technologies. The ART shared authority over internet applications and new multimedia services with the Conseil supérieur de l'audiovisuel (CSA), the broadcasting regulator. After a short experiment with a single FCC style regulator in the late 1980s, the French regulatory regime treated broadcasting and telecoms as distinct domains with distinct priorities. Whereas telecom regulation was to focus on competition, audiovisual regulation was designed to regulate content.<sup>57</sup> Technological convergence complicated this already ambiguous division of labor. There was no provision in the 1996 Telecom Law to designate regulatory authority over new technologies. Although the internet remained largely unregulated in France, the lack of clarity about what agency or agencies had authority over on-line services created a great deal of uncertainty about how important regulatory disputes would be resolved in the future. For example, it is unclear whether internet telephony on the cable network would be subject to the ART's pricing rules or whether it would fall under the CSA's

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<sup>56</sup> Interviews, Paris 1998; Brussels 1998.

<sup>57</sup> Interview, Paris 1998.

jurisdiction. There was also a risk that the two regulators would adopt overlapping or incompatible regulations.

### ***Interconnection***

Elaborated in the 1996 telecom law and a government decree,<sup>58</sup> the French regulations for pricing and interconnection encouraged measured, facilities-based competition. As the Secrétaire d'Etat à l'Industrie, Christian Pierret declared, the government's policy was "No to predators. Yes to investors."<sup>59</sup> The relatively low published interconnections rates for 1998 and 1999 fell within the EU recommended range. While these rates were low enough to allow competition to develop, industry analysts and investors did not believe that the low rates posed a serious threat to France Télécom's dominant position and in contrast to Germany the announcement of the interconnection catalogue had virtually no impact on France Télécom's share price.<sup>60</sup> In fact, the pro-competitive effects of the low rates were tempered by three important provisions in the French regulatory regime that protected France Télécom from a rapid onslaught of price based competition.

First, the interconnection charges for companies holding a licenses to operate their own infrastructure (L33.1) were considerably lower than the rates charged to companies with a license for providing telecom services using leased lines (L34.1). This differential pricing favored facilities based competition while discouraging simple resale. Second, the regulations imposed no legal obligation on France Télécom to provide unbundled access to its competitors. While network unbundling was widely considered to be an

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<sup>58</sup> Decree No.97-188 3 Mars 1997.

<sup>59</sup> Discours de Christian Pierret lors de l'inauguration du centre de commutation de Cegetel à Bron. 30 janvier 1998. [www.telecom.gouv.fr](http://www.telecom.gouv.fr)

<sup>60</sup> [www.francetelecom.fr](http://www.francetelecom.fr)

important way to open up the local loop, unbundled access seemed not to be a priority either for the ART or the new entrants.<sup>61</sup>

Third, the French approach to tariff rebalancing and uniform national tariffs raised the effective cost of interconnection and limited the development of competition in the liberalized market. To compensate France Télécom for its universal service obligation, two charges were added to the published interconnection rates, thereby increasing the real cost of interconnection for the new entrants above the EU recommended range.

**1998 Interconnection Rates (ECU/100 per minute)**

	<b>Local</b>	<b>Single Transit</b>	<b>Double Transit</b>
<b>France</b>	0.71	1.73	2.55
<b>Germany</b>	1.0	1.71	2.61
<b>UK</b>	0.64	0.91	1.74
<b>EU range</b>	0.6-1.0	0.9-1.8	1.5-2.6
<b>French total w/uso &amp; ADC*</b>	1.27	2.40	3.22
<b>% above EU maximum</b>	27%	33%	24%

Source: EU Commission; \* Cegetel contribution to the round table organized by the European Commission on the liberalization of the telecommunications market, 1998.

The first supplemental charge paid by all operators, including mobile operators, connecting to France Télécom's network was the so-called "geographic component" of universal service. The geographic component covered the estimated FFr 2 billion cost to France Télécom of providing uniform tariffs throughout France irrespective of the caller's location as part of its commitment to public service and territorial integrity. The second charge paid by all fixed line operators was the access deficit charge (ADC) which protected France Télécom's revenues as it completed tariff rebalancing at an estimated cost of FFr 1 billion in 1998. Unlike many of its European counterparts, the French government allowed France Télécom to rebalance its tariffs considerably in the years prior to full market liberalization. When the market opened to competition in 1998, the

<sup>61</sup> Interviews, Paris 1998.



incumbent's preemptive cuts in long distance rates minimized the opportunities for cream skimming and made it very difficult for the new entrants to establish a revenue base from which to grow. Although tariff rebalancing was to be completed by 2000, the high real cost of interconnection and the significant rebalancing squeezed the new entrants margins at a time when investments were critical. The aim of the French interconnection and pricing regulation was to promote infrastructure investment and encourage prices to fall, but avoid predatory cuts in retail prices. The effect was to limit competition and allow France Télécom to maintain over 95% of the market after a year of competition.

### ***Universal Service***

Reflecting a strong commitment to maintaining public service in a competitive market, the French regulations for universal service differed significantly from the European model both in their broad scope and high cost evaluations. The 1996 telecoms law designated France Télécom as the public service operator with sole responsibility for providing of universal service and a broad, largely undefined obligation to serve the public interest. France Télécom's special position grew out of the historic partnership between the state and the public telecom operator and their shared commitment to serving the public interest.

The French law recognized three components of universal service -- *l'intérêt général* which included national defense and research and which was funded through the government's budget; *les services obligatoires* such as digital lines, telex service and data communication which had to be made available, but which were not subjected to price restraints; and *le service universel* which was the mandatory provision of universal telephony service at an affordable price, public phone cabins and phone directories.

While France Télécom was required by law to provide comprehensive public service, it was entitled to compensation from its competitors. The universal service decree stipulated that France Télécom would receive compensated both from the charges added to the interconnection rates described above and from a universal fund to which all operators would contribute based on market share.<sup>62</sup> The cost of providing universal service at an affordable price was based on the geographic component and access deficit charges discussed above and a social component based on the cost of providing discounted service to elderly, handicapped and disadvantaged people. The calculations did not subtract any commercial advantage that FT would gain by providing universal service as the committee of experts recommended.<sup>63</sup> The regulator estimated that the total cost to France Télécom for providing universal service in 1998 was FFr 6 billion. While lower than 9 billion that France Télécom proposed, the regulator's costs estimation was considered high by international standards and elicited sharp criticism from many industry analysts.<sup>64</sup> The estimated cost to the new entrants of FFr 1 billion over two years could have constituted a barrier to entry to small firms.

In competitive market, France Télécom's special position as the "public service operator" conferred certain advantages on the former monopolist.<sup>65</sup> While the universal

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<sup>62</sup> Decree No 97-475 4 Avril 1997

<sup>63</sup> Several economic studies concluded the cost to the dominant operator of providing universal service is zero; in fact, it may even confer certain benefits. In addition to the positive image, providing universal service gives the operator the opportunity to sell value added to all households. [www.analysis.com](http://www.analysis.com). The French committee of experts suggested that such benefits be taken into account when calculating the cost of the use to France Télécom Champsaur, Paul. 1996. *Conclusions du groupe d'experts sollicités par le gouvernement français*. Paris.. There was some evidence that the positive image associated with public service influenced French consumers. For example, A CSA-La Tribune survey found that for 64% of consumers the fact that an operator fulfilled a public service mission would count a lot or somewhat in their choice of telecom provider. "Les Français sont mûrs pour la concurrence" *La Tribune* 16 December 1997.

<sup>64</sup> For analysis and figures see Curien, Nicolas. 1998. *Le service universel des télécommunications en France. Cahiers du CRID*.

<sup>65</sup> Le rapport Delebarre of September 1997 recommended extending universal service into the areas of health, education and regional development. Interview, Paris 1998.

service regulation did not require that all French households have internet access, the France Télécom's broader responsibility for public service did boost the incumbent operator's growing internet business. For example, the preferential internet rates the incumbent was allowed to offer schools allowed France Télécom to build a large customer base who were familiar with France Télécom's on-line services, including its internet service provider, Wanadoo. Offering internet access to schools also gave France Télécom the opportunity to experiment with new technologies and even to develop educational content. France Télécom's responsibility for research and development may also have given it commercial advantages in the marketplace. France Télécom's competitors recognized the potential benefits of public service. While unable to compete with the France Télécom's low tariffs for schools, Cegetel outbid the incumbent to win the contract to provide an intranet for the French hospitals. *Le Réseau santé social* consisted of a secure network for the exchange of medical information and smart cards with patient medical and insurance information and provided an excellent opportunity for Cegetel to develop valuable experience with these new technologies.<sup>66</sup> This project was, however, an exception. In the liberalized market, France Télécom held a near monopoly on public service and was the government's preferred partner for its internet initiatives.

To summarize, the French regulatory framework had two effects on the development of the telecom market. First, the regulations limited competition and reinforced the market power of the incumbent operator, France Télécom. Second, although the interconnection regime was intended to promote investment, the French regulations also limited investments in new technologies. The instability created by the political influence over regulation coupled with tight margins and limited opportunities to

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<sup>66</sup> "La Cegetel informatisera la santé" *Figaro-Economie* 2 January 1998

gain market share all made it difficult for the new entrants to invest in new technologies. The failure to liberalize the use of the cable network, stifled competition in the local loop and blocked an alternative means of delivery of new services; as a result, both the cost of internet access and the per minute local call charges paid by internet users remained very high in France.<sup>67</sup> In fact, French internet users staged a twenty four hour boycott of the internet to protest the high cost of internet access in France in December 1998. Finally, France Télécom's success in lobbying for protective regulation decreased the competitive pressure on the former monopolist to innovate and invest in new technologies.

**PROMOTING THE INFORMATION SOCIETY**  
***Industrial Policy in an Open Market***

The traditionally dirigiste French state disposed of a rich array of policy tools and blueprints for promoting both technological innovation and massive infrastructure projects. Yet, many telecom experts questioned whether traditional industrial policies were either possible or desirable in a liberalized market.<sup>68</sup> Although policy makers did not simply replicate the *grand projet* approach of the past, the French government nevertheless pursued an activist policy to promote the internet in France and address the risks and opportunities associated with the “information society.”

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<sup>67</sup> Unlike the United States where there was a flat rate for local calls, in France and most other European countries all local calls including calls to dial-in to an internet service provider were billed at a relatively high per minute rate.

<sup>68</sup> Interviews. 1996 and 1998. Some government officials privately floated the intriguing idea that competition was a powerful tool that the government could use to promote investment in new technologies.

***Le Défi***

France trailed the United States and its many of its European partners in all major indicators of the growth of the internet, particularly in terms of electronic commerce.

**France v. United States**

	France	United States
PC with modem	16%	42%
Internet Penetration	2%	25%
Internet hosts per 1000 inhabitants	11.4	78.8
Web servers per 1000 inhabitants	0.71	5.53
Secure Web servers for e-commerce per 100,000 inhabitants	0.43	6.13
Estimated internet revenues in 2001 (US\$ billion)	16.1	206.8

Source: OECD, Forrester

Some large retailers such as Fnac and Carrefour and a few specialty wine and food vendors invested heavily in electronic commerce, but most large French businesses had little more than a symbolic presence on the Web.<sup>69</sup> While French firms were slow to invest in electronic commerce and offer innovative on-line services, American firms established a strong presence in the French market. For example, the American E-trade offered on-line brokerage services in France and Yahoo launched the most visited French language portal. In addition, one third of all French internet users accessed *la Toile* using an American internet service providers (AOL, Compuserve and MSN) and 95% used Microsoft or Netscape navigators. In terms of content, only 2% of all the Web's content was in French and the majority of the sites most visited by French *internautes* were American.

<sup>69</sup> See for example, [www.fnac.fr](http://www.fnac.fr) or [www.fromages.com](http://www.fromages.com). These observation are based on interviews and the author's own extensive web-based research. They also confirmed by numerous articles in the press including Michel Alberganti "A quoi sert Internet si on ne peut pas y acheter un billet de train?" Le Monde 14 Mars 98; "La Fête d'Internet consacre l'entrée de la France sur la Toile" Le Monde 22 Mars 1998; "Internet : le commerce réinver.te" Enjeux Les Echos Mai 1998.

The slow development of the internet in France was blamed on everything from French culture to the process of industrialization to the state itself.<sup>70</sup> However, the French public debates about the so-called technology gap and the appropriate policy response focused not so much on France's weaknesses as on America's strength. Recalling the strong economic nationalism of the 1970s and Sevrans-Schrieber's *Le Défi Américain*, French political leaders decried the United States' international competitiveness in new information and communication technologies and demanded decisive action to protect France's sovereignty, economic strength and her very identity.<sup>71</sup> Behind the accusations of imperialism and the familiar anti-American rhetoric lay very real fears on the part of business and political leaders that French national competitiveness was declining and that French firms would find themselves unable to compete in an information economy dominated by global leaders such as Microsoft, Intel or Disney.<sup>72</sup>

French public discourse about the internet also revealed a strange mixture of skepticism about their importance and pessimism about their effects. In political debates, newspaper articles and conversations, French people from diverse educational and socioeconomic backgrounds frequently dismissed the internet, electronic commerce and the information revolution as hype.<sup>73</sup> The internet was still seen by many as a specialized

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<sup>70</sup> "Internet ne se décrète pas" *Figaro-Economie* 19 September 1997. Interview de Jean-Michel Billaut "La France est extrêmement en retard car son élite ne comprend pas Internet" *Le Monde* 8 July 1997. Président d'IBM France Bernard Défau, "Relevons nous le défi d'Internet!" *Le Monde* 7 August 1997

<sup>71</sup> A conference at the Assemblée Nationale entitled *Ancien Nation, Nouveaux Réseaux* provided striking evidence of the strong anti-American sentiments and the fears of U.S. hegemony. Focusing more on dangers than solutions, the speakers including Fabius, Cochet, Drot, Théry, DeBray all focused on the threats to national sovereignty and the need to fight American dominance. (develop)

<sup>72</sup> Interviews, Paris 1998. As one senior policy maker put it, although the US government may not have used Microsoft to dominate the world, Microsoft was dominating the market.

<sup>73</sup> Michel Alberganti "A quoi sert Internet si on ne peut pas y acheter un billet de train?" *Le Monde* 14 March 1998. Amy Harmon, "Why the French hate the internet" *The Los Angeles Times* 27 January 1997.

network only for scientists and some businesses and not as a fundamentally new way of doing business, communicating and learning. At the same time, newspaper editorials and opinion polls expressed a general pessimism about the social consequences of the internet and the “information society.” 56% of the French people polled in a 1995 Eurobarometer poll were “very negative” about the impact of an information superhighway.<sup>74</sup> A 1997 poll conducted by Alcatel and SOFRES “Les Français et le multimédia” showed that 43% of the respondents were skeptical, indifferent or opposed to the growth of the internet and other multimedia technologies.

The French public's concerns about the information society were illustrated with striking clarity by the *Procès de l'Internet*, a mock trial of the internet staged in March 1998 as part of the *Fête de l'Internet*. In a Paris courtroom, a young woman representing the internet faced accusations of assassinating time and space, murdering personal liberties, deepening societal cleavages and acting as an accomplice to illicit content. After two days of expert testimony and heated debate, the jury found the defendant not guilty of the majority of fifteen charges, but did convict the internet of threatening individuals' privacy and acting as an accomplice to illicit content.<sup>75</sup> While this mock jury gave the internet a suspended sentence, the real jury of public opinion remained skeptical and largely pessimistic about the effect of the internet on French society.

### ***Un Grand Projet?***

Although French policy makers repeatedly called for state leadership to help promote the development of the internet in France and address the public's concerns, there was little agreement within the government on what action should be taken. In

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<sup>74</sup> *Le Monde* 28 February 1995. *Le Figaro Economie* 28 August 1997

<sup>75</sup> A complete transcript and video of the trial was available at [www.cie.fr](http://www.cie.fr).

1994 Gerard Théry, former Director General for Post and Telecommunications, published a report proposing a massive state-led plan to construct a French information superhighway.<sup>76</sup> Théry's report became the focal point of controversy over the viability of a *grand projet* in a liberalized market and the appropriate role for the state during this period of rapid technological change. Théry advocated an extremely ambitious state-led plan to build a complete fiber optic *autoroute de l'information* or information superhighway by 2015 at a cost of FFr 150 billion to FFr 200 billion. Like the initiatives led by American Vice-President Gore<sup>77</sup> and European Commissioner Bangemann, Théry's plan favored government support for research and development, public funding of pilot projects and an active role for the government as a lead user. However, unlike these more market oriented proposals, Théry proposed that the state use its ownership of France Télécom to finance the construction of the national information superhighway. Notably, his traditionally *dirigiste* plan contained no mention of any other firms despite the government's commitment to the EU policies allowing competitors to provide basic telephony services and infrastructure in 1998.

After a great deal of debate, the government chose not to adopt Théry's proposal for a state-led infrastructure project. According to sources in the government and in the public operator, the management of France Télécom refused to make the massive network investment Théry advocated.<sup>78</sup> Focusing on preparing for competition and privatization, the company's leaders declared that a significant, risky, long-term

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<sup>76</sup> Théry, Gérard. 1994. *Les autoroutes de l'information*. Paris: La documentation Française. A less publicized companion report offered a somewhat limited vision of new services would travel on the superhighway. Bréton, Thierry. 1994. *Les Téléservices en France : Quels marchés pour les autoroutes de l'information?* Paris: La documentation Française..

<sup>77</sup> Clinton, William J., and Albert Gore, Jr. 1993. *Technology for America's Economic Growth: A New Direction to Build Economic Growth*. Washington, DC: The White House.

<sup>78</sup> Interviews, Paris 1996..



investment was out of the question. Confronted with a stubborn economic recession, growing social unrest, and pressure from international capital markets, the French government was not in a position either to fund such a project itself or to force a showdown with France Télécom, its most valuable and salable asset.<sup>79</sup>

More importantly, there was a growing consensus among policy makers and industry experts that a *grand projet* approach might have worked 10 years earlier, but not in the new market reality of late 1990s when infrastructure and service were both being opened to competition.<sup>80</sup> The mixed results of the Plan Cable and the Plan Télématique raised serious doubts about the French government's ability to implement a large-scale technological initiative in an environment of considerable technological and market uncertainties. Despite public expenditures of FFr 25 billion financed by France Télécom, the 1982 Plan Cable failed to boost cable penetration above 20% or stimulate private investment in cable television. Competition from terrestrial and satellite TV broadcasters, the high cost of subscriptions, and the limited number of channels all limited demand. In 1989, the government allowed private firms to operate the loss making network while France Télécom retained full ownership. As Gerard Eymery, chairman of the multimedia operations of France Télécom said, "France made just about every mistake in cable that it was possible to make."<sup>81</sup> An elite-organized, top-down industrial policy may have been effective for the relatively straight forward infrastructure improvement project when the demand for basic voice services had already been

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<sup>79</sup>At the time, the state owned 100% of France Télécom and set the national public operators' investments with the *contrat du plan*. The government chose not to exercise its power and try to force the management of FT to build the *autoroutes de l'information*. The government did not want to jeopardize the planned privatization of France Télécom or the operator's alliance with Deutsche Telekom and Sprint. Direct control of managerial decisions was, for example, blamed for the failure of the alliance between state-owned Renault and Volvo in 1993.

<sup>80</sup> Interviews, Paris 1996 and 1998.

established. However, the state was not equipped to pick and choose technological winners in an environment of considerable uncertainty and rapid change.<sup>82</sup>

While business and political leaders debated the appropriate role for public policy, no one questioned that the state did indeed have a role. Rather what emerged from these debates was a push to define a new industrial policy approach based on an old partnership between the private sector and the state. By late 1995, a consensus emerged that investments in new infrastructure should be left in the hands of the private sector.<sup>83</sup> Following the example of EU Commissioner Bangemann, the French government quickly launched a series of publicly funded pilot projects designed to promote the information superhighway. In 1995 the Ministry of Industry selected 49 projects to receive public funding, nine of which were proposed by France Télécom.<sup>84</sup> In 1996 the *loi sur les autoroutes de l'information* amended the existing regulations to allow the cable operators to participate in these pilot projects and offer trials of voice over the cable network. This narrow legislation did not, however, establish a regulatory regime to govern new on-line services technologies or define a policy for promoting the internet.<sup>85</sup> Several working groups in the ministries and the Assemblée Nationale were established to build expertise, solicit public reactions and develop policies to address the risks and opportunities associated with the internet and other new information and communication

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<sup>81</sup> John Ridding, "France ponders superhighway gamble" *Financial Times* 27 October 1994.

<sup>82</sup> See Ziegler, J. Nicholas. 1997. *Governing Ideas : Strategies for Innovation in France and Germany*. Ithaca: Cornell University Press.

<sup>83</sup> Interviews Paris 1996 and 1998.

<sup>84</sup> Caroline Monnot, "Les projets d'autoroutes de l'information ne précipiteront pas la déréglementation du téléphone," *Le Monde* 2 March 1995.

<sup>85</sup> January 30, 1996. *Journal Officiel*.

technologies in France.<sup>86</sup> The working groups published numerous reports attesting to the formidable challenges of the information society, though offering few concrete proposals.

### *Une société de l'information solidaire*

In 1997 these disconnected efforts were pulled together and elevated near the top of the political agenda by the Socialist Prime Minister Lionel Jospin. In a landmark speech on August 25, 1997 in Hourtin, Jospin presented his vision of an activist public policy that would lead France into a "société de l'information solidaire."<sup>87</sup> A few months later the Prime Minister published an Action Plan, reiterating his vision and outlining concrete measures to promote the French information society.<sup>88</sup> Jospin's plan enjoyed strong support from the business community and from political leaders on the Left and Right.<sup>89</sup> The Prime Minister emphasized not only the well known technology gap, but also France's strengths from firms such as France Télécom and Thomson to prestigious research institutes like INRIA and CNET to her cinema industry and rich cultural heritage. Although it was critical for mobilizing support and mollifying public fears, such a high profile awareness campaign was not specific to France and closely resembled initiatives by political leaders in other countries including the US, Finland and Singapore. What distinguished Jospin's policy were his concrete industrial policy initiatives.

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<sup>86</sup> See for example, Miieo, Thierry. 1996. *Les Réseaux de la Société de l'information*. Paris: Commissariat général du Plan., Office Parlementaire d'Évaluation des Choix Scientifiques et Technologiques. 1997. *La Société de l'information : quel avenir?* Paris: Assemblée Nationale - Sénat. Poignant, Serge. 1996. *Les autoroutes de l'information et la francophonie*. Paris: Assemblée Nationale. Lafitte, Trégouët, Gérard, Lombard

<sup>87</sup> Meaning a united information society. Jospin, Lionel. 1997. *Préparer l'entrée de la France dans la société de l'information*.

<sup>88</sup> Comité interministériel sur la société de l'information. 1998. *Préparer l'entrée de la France dans la société de l'inform@tion : Programme d'action gouvernemental*. Paris: La documentation Française.

<sup>89</sup> "Les patrons applaudissent" *Le Figaro Economie* 28 August 1997. and interviews.

Jospin established an inter-ministerial committee to take action in six priorities areas : education, culture and content; virtual government; electronic commerce; research and development; regulation; and consumer protection. Within these broad domains, the government launched 216 concrete initiatives and allocated FFr 5.7 billion over two years to help finance these measures. In a speech on January 19, 1999 Prime Minister Jospin announced that the majority of the 216 initiatives had been implemented in 1998, with particularly strong results in the areas of education and administrative reform. During 1999 and 2000, the second phase of his information society action program would focus almost exclusively on public service, targeting judicial reform, culture, administrative reform and territorial equity.<sup>90</sup> These initiatives used the state's responsibility for delivering public service, its wide reach and its considerable resources to promote technological innovation. The government's actions were very much oriented toward industrial policy and did not regulate the internet as the German government did.<sup>91</sup>

The large public sector and the history of linking telecom policy with other policy concerns allowed the state to play an important role as a lead user of the internet. As part of its reinventing government initiative, the French government made a great deal of information, including legislation, government reports and statistics available to the public on line. So that all citizens could access this information, the French postal service, *la Poste* provided internet access in post offices throughout the country. The government also established procedures for businesses to file customs declarations and TVA receipts electronically and planned to allow individuals and businesses to file their

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<sup>90</sup> [www.premier-ministre.gouv.fr](http://www.premier-ministre.gouv.fr)

<sup>91</sup> While the government studied ways of using regulation to protect privacy and block illicit content, no legislation was introduced in 1998. Similarly, the government did not act on proposals concerning digital

income taxes over the internet. Although the government began posting tenders for public procurement on-line, efforts to have bidding and purchasing on-line were stalled pending changes in French commercial law to accommodate electronic contracts. These initiatives were designed not only to encourage internet use but also to serve as an example of how on-line services could increase efficiency and improve communication.

Introducing the internet into French public schools played a prominent part in Jospin's vision of the *une société de l'information solidaire*. With the Prime Minister's active support, the French Minister of Education Claude Allègre launched a series "school-on-line" initiatives to teach young people how to use these powerful new technologies and to improve the quality of French education. The national government and local authorities together committed an estimated FFr 15 billion to purchase new equipment for schools from 1998-2000.<sup>92</sup> From December 1997 to December 1998 the number of French secondary schools connected to the internet increased from 20% to 70% in the *collèges* and from 40% to 90% in the *lycées*.<sup>93</sup> The national government also initiated programs to train teachers and funded projects to develop educational content. The use of internet technologies in public school classrooms created a significant demand pull and introduced the new technologies to a whole generation of consumers. Approximately one half of all young French internet users, first started using the internet at their school or university.<sup>94</sup>

Jospin's plan also leveraged the state's considerable resources to support research and development in new technologies. In addition to allocating public funds of FFr 1.3

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signatures, encryption and changes in commercial law to facilitate electronic commerce. Lorentz, Francis. 1998. *Le commerce électronique*. Paris: Ministère de l'Économie, des Finances et de l'Industrie..

<sup>92</sup> Intervention de Christian Pierret, Secrétaire de l'Etat à l'Industrie, 1 December 1997.

[www.telecom.gouv.fr](http://www.telecom.gouv.fr)

billion over five years, the government also obliged the national telecom operators to contribute an additional FFr 2.7 billion for R&D.<sup>95</sup> At the same time, the government led the reorganization of the publicly funded research centers and tried to reorient their efforts toward applied research and development. After France Télécom's privatization, its prestigious, publicly funded CNET research lab divided its efforts three ways between proprietary research for France Télécom, cooperative research with other operators and equipment suppliers, and basic research. In addition, a newly established network (RNTR) coordinated the work of researchers from the CNET, INRIA, CNRS, CEA, and universities under the direction of a central committee.<sup>96</sup> To facilitate the commercialization of French research the Ministry of Finance used a portion of the proceeds from the sale of France Télécom to establish up a high-tech venture capital fund. This "seed" money was available to research centers such as INRIA to support the commercialization of innovations developed in public research centers. Interestingly, this policy of providing seed money to support the use of high growth industries had been used by the government of Giscard d'Estaing in the 1970's when the conservative French President tried to reconcile a liberal economic policy with strong state support for technological innovation.<sup>97</sup>

As the guardian of French culture, the state also adopted policy measures to promote French content and cultural material. Recognizing that the internet was a powerful new vehicle for diffusing the French language and culture, Jospin's government

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<sup>93</sup> Ministère de l'Éducation Nationale, de la Recherche et de la Technologie. [www.premier-ministre.gouv.fr](http://www.premier-ministre.gouv.fr)

<sup>94</sup> [www.internet.gouv.fr](http://www.internet.gouv.fr)

<sup>95</sup> Obligations to contribute 4 - 7% of turnover to fund R&D were written in to the operator's licensed and enforced by the state.

<sup>96</sup> Rapports du Didier Lombard et Michel Delebarre "Le gouvernement réorganise la recherche dans les télécoms" Les Echos 15 May 1997

started to bring the nation's great cultural wealth to new digital media. The government funded efforts to create electronic libraries, museums and art galleries, such as the very successful CD-ROM of the Louvre's collection. In an effort to reorient the taxes levied to support French cinema toward multimedia content, the government also increased funding for the Centre national de la cinématographie by 50% and allocated FFr 25 million to multimedia programming. Since many blamed low internet penetration rates in France and the fact that only 2% of the Web's content was in French, policy makers hoped that increasing the French content would boost demand. A SOFRES survey showed that in French households the second most common use of a PC after word processing was accessing educational and cultural material.<sup>98</sup>

The government's concrete policy initiatives had a significant impact on the development of the market through the technologies and the private sector partners that the state chose. In the liberalized French telecom market, the government's high-profile initiatives to use public service to stimulate the market for on-line services tended to favor France Télécom. Building on the close relationship between the state and the former monopolist and its foundation in technological modernization and public service, Jospin singled out France Télécom as the government's partner in several of its information society projects. As with the universal service obligation, the incumbent's role in these public service projects boosted France Télécom's commercial internet business and allowed the incumbent to experiment with new technologies. For its part, France Télécom publicly supported the Prime Minister's initiative. On the day of the

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<sup>97</sup> Hall, Peter. 1986. *Governing the Economy : The Politics of State Intervention in Britain and France*. New York: Oxford University Press.

<sup>98</sup> L'Observatoire du Multimédia 1998. [www.sofres.com](http://www.sofres.com)

speech at Hourtin, France Télécom issued a press release outlining the public service operator's own efforts to promote the internet in the government's six priority areas.<sup>99</sup>

The most important effect of Jospin's policy may not be what it did do, but rather what it did not achieve. Jospin's information society policy rested on a partnership between the public and private sector; however, the private sector was slow in picking up its end of the bargain. In the liberalized market, the state stepped back and did not finance infrastructure modernization, subsidize equipment like the Minitel terminal or invested in electronic commerce, but the traditionally risk adverse private sector failed to step in. Targeting public service, research and culture, Jospin's initiatives failed to incite private investments in infrastructure and e-commerce. France Télécom followed the government's lead in using the internet to improve public service, but was very cautious about experimenting with new broadband infrastructures and innovative services on its own.

### ***THE PLAYERS***

#### ***Market Entry and the incumbent's response***

Three large, politically powerful French conglomerates, Vivendi, Suez-Lyonnaise des Eaux and Bouygues, entered the French telecom market and invested in their own telecom networks to compete with France Télécom. A few niche players targeted business users, but unlike Germany and the US few resellers offered telecom services over the incumbent's network. As discussed above, the regulatory framework did influence this pattern of entry in the French market. First, the interconnection regime discouraged simple resale. Second, for all new entrants the combination of France Télécom's rebalanced tariffs, the ADC and universal service contributions limited the

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<sup>99</sup> Communication du 16 janvier 1998. Accueil de Presse. [www.francetelecom.fr](http://www.francetelecom.fr)



margins for price based competition. Moreover, as in all newly liberalized markets, the enormous influence of national regulation on the development of the market made political power crucial for the new entrants. The regulatory framework, does not however explain why these three firms did enter the market and other powerful firms did not or how the new entrants exploited converging technologies to compete with the former PTT. In fact, the major facilities based competitors announced their intention to enter the market for voice telephony before the 1996 regulatory law was adopted.

For the new entrants, relatively low telephone usage created significant opportunities for growth in the FFr 160 billion market.<sup>100</sup> In addition, surveys indicated that the majority of French business and residential users would consider switching operators for both data and voice service.<sup>101</sup> Yet, the close relationship between the state and the incumbent operator made entry into the French market particularly difficult. France Télécom was a formidable opponent with its modern digital network and high customer approval ratings. The incumbent maintained a strong position in the face of competition in the rapidly expanding mobile market. Moreover, the former monopolist was able to use its political clout to persuade the government to rebalance tariffs and create a generally favorable regulatory environment.

Like their counterparts in other European markets the largest new competitors disposed of considerable financial and political resources and foreign technical partners

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<sup>100</sup> Total minutes per line per day 1996

France	9.2
German	10.7
UK	11.7

Source: Financial Times

<sup>101</sup> IDC survey of business users for Infopromotions and Réseaux et Télécoms. "Télécommunications : le pari difficile des nouveaux opérateurs" Le Figaro 29 October 1997; CSA Opinion/La Tribune survey of residential users. "Les Français sont mûrs pour la concurrence dans les télécoms" La Tribune 16 December 1997.

to compete against the incumbent. However, certain characteristics distinguished the three firms that did enter the market to compete against the well positioned incumbent. First, the new entrants had existing interests in cable television and mobile communications which they planned to use to offer bundled services in the liberalized market. These holdings boosted the new entrants' competitive position by providing both an alternative means of delivering service and valuable experience dealing with France Télécom. Furthermore, as large influential national firms, all three new entrants represented French interests and were able to capitalize on the surge in economic nationalism and position themselves in what seemed to be a cozy oligopoly.

### ***Vivendi***

When the French market opened to competition, Vivendi's telecom arm Cegetel quickly emerged as the strongest competitor to France Télécom. One year after liberalization, Cegetel claimed an estimated 5% of the long distance market, the largest share of any of the new entrants.<sup>102</sup> Its parent company, Vivendi, formerly La Compagnie Générale des Eaux, was a powerful conglomerate that expanded beyond their core water business into several activities including cable television. To enter the liberalized French telecom market, Vivendi planned to invest a total of FFr 33 billion by 2000.<sup>103</sup> Vivendi's entry strategy was two fold : to offer bundled voice, television and internet services and to become a national operator competing with France Télécom in all market segments.

Vivendi planned to leverage its interests in broadcasting, publishing and the internet to make it a powerful "multimedia" company. Limited in its ability to compete on price, the firm planned to offer customers one stop shopping and to bundle telephony,

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<sup>102</sup> [www.cegetel.fr](http://www.cegetel.fr)

<sup>103</sup> 1987-2000 33 bn dans les télécoms; 19 bn 1987 à 1997, 5bn par ans prévus 1998 - 2000.

cable television and internet services as the cable companies in the UK had done. Vivendi operated approximately one third of the French cable television network and owned the very successful Canal + pay television channel and the media company Havas. The firm's aggressive new CEO Jean-Marie Messier reorganized the group to absorb Havas and Canal+ and create a single Communications division. With this strong portfolio and none of France Télécom's loyalties to Minitel, Cegetel hoped to become the leading provider of internet services in France.<sup>104</sup> By merging its successful mobile business SFR and Cegetel, Vivendi also planned to take advantage of the convergence between fixed and mobile communications to offer customized services and reduce costs. Yet, when the telecom market opened to competition, Vivendi struggled to integrate its telecom and media interest and to operationalize what it meant to be a "multimedia company."<sup>105</sup> Despite frequent declarations to the contrary,<sup>106</sup> at least in the initial stages of competition, Cegetel appeared to be more of an alternative France Télécom than a new high tech firm.

Often referred to as "France Télécom *bis*," Cegetel seemed to be positioning itself as a duopolist. In many respects the firm followed what is known as a "me too" strategy of emulating the incumbent's strategy rather than differentiating itself as a multimedia firm. Although Cegetel undercut France Télécom's published long distance rates by 10-30%, France Télécom's advantageous pricing packages actually made the incumbent's service less expensive than Cegetel's.<sup>107</sup> During the first year of competition,

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<sup>104</sup> "Cegetel met Internet au centre de son offre" La Tribune 21 October 1997.

<sup>105</sup> "La stratégie audiovisuelle à la serpe du PDG de la Générale des eaux" Le Monde 3 Mars 1998. This stinging editorial on Vivendi asked if convergence were a myth.

<sup>106</sup> "Cegetel inaugure le premier service grand public concurrent de France Télécom" Les Echos 2 February 1998

<sup>107</sup> For example, France Télécom's "Primaliste" service offered residential customers discounts on six frequently pre-selected numbers for a FFr 15 monthly fee. [www.francetelecom.fr](http://www.francetelecom.fr)

Cegetel did not initiate price cuts, but rather lowered its prices in response to France Télécom's rate reductions. To ease its dependence on France Télécom's network, in April 1997 Cegetel paid FFr 1.6 billion in cash to partner with the French national railroad, SNCF, which owned an extensive fiber optic network and valuable rights of way. Through their joint venture Télécom Développement, Cegetel planned to invest FFr 10 billion to modernize the SNCF's network and extend its coverage. To gain technical expertise and capital, Cegetel took on three foreign partners, British Telecom (26%), Mannesmann (15%) and SBC (15%). Cegetel hoped that by 2003 this strategy would allow it to capture 20% of the long distance market 40% of mobile, 20% of data and 30% of the local markets where the company had its own network.<sup>108</sup>

It was Vivendi's political strategy as much as its commercial strategy that fueled predictions of a duopoly. The *Sécretaire de l'Etat à l'Industrie* Christian Pierret, inaugurated Cegetel's telecom network on February 1, 1998 at a celebrity studded ceremony attended by leading public officials, industrialists, scientists and pop culture icons. Behind this public display was a good working relationship between the new entrant and the state. As a major domestic and international water utility and one of the largest company in France, Vivendi had considerable political power and well established connections in the national and local governments. Moreover, by operating the cable network and the second mobile telecom operator SFR, Vivendi acquired valuable experience negotiating with France Télécom and the government regulators. Armed with a team of lobbyists who had worked for the DGT, Cegetel took a regulatory stance very similar to that of the incumbent France Télécom. In marked contrast to the UK and Germany where the new entrants vehemently contested many major regulatory, Cegetel

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<sup>108</sup> "Cegetel joue le mariage du fixe et du mobile" *Figaro-Economie* 2 February 1998

did not challenge the ART's decisions on interconnection or universal service despite the fact that these regulations appeared to favor the incumbent.<sup>109</sup>

While Cegetel did not benefit from asymmetric regulation, it did help construct a regulatory regime that favored national facilities based competition and discouraged resale. Moreover, Cegetel seemed to have garnered behind the scenes support for its entry strategy and its position as France Télécom's primary competitor. A French company committed to developing French on-line services and content, creating 10,000 new jobs and even providing public service, Cegetel was more familiar to the regulators than an aggressive international firm such as WorldCom which made policy makers suspicious.<sup>110</sup> This kind of political support and not just political power proved to be crucial for entering the market. In other European countries electric power companies used their national networks to provide telecom service or partner with a new service provider. Similarly, the French electric company, EDF considered diversifying into telecommunications with the encouragement of the Minister for Industry Fillon.<sup>111</sup> In 1998, EDF's plans to enter the telecom market were put on hold indefinitely in the face of opposition from the new Socialist government. While still hoping to diversify into telecoms, EDF President Edmond Alphandéry declared that "At present the government has asked us to take our time."<sup>112</sup>

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<sup>109</sup> Jean-Marie Messier said he was confident in ability of ART to regulate competition and praised the ART for its exceptional work in a speech at the ENST "La Compañie Générale des Eaux confiante" La Tribune 28 May 1997. While some Cegetel managers criticized aspects of the regulatory regime, they accepted its general tenets. "Cegetel juge la concurrence dans le téléphone déjà menacée" Le Monde 4 November 1997.

<sup>110</sup> Interviews, Paris 1998

<sup>111</sup> Interviews, Paris 1996 and 1998.

<sup>112</sup> "Le gouvernement modère les ardeurs d'EDF dans les télécommunications" Les Echos 4 Mars 1998.

***Bouygues***

Like Vivendi, Bouygues and Suez-Lyonnaise pursued entry strategies based on technical convergence and bundled service; however, both of these powerful firms encountered serious problems entering the liberalized market for voice telephony. Thought to be the number three in the French market, Bouygues planned to integrate fixed and mobile technologies to offer national telecom services. The firm did not intend to do everything that France Télécom did, but rather hoped to gain a more modest 10-15% of the business market and 7-12% of the residential long distance market.<sup>113</sup> Bouygues planned to offer fixed service through its subsidiary 9 Télécom in a complex cascade of holding arrangement with its foreign partners Telecom Italia and Veba, the German power utility and telecom operator. After losing its bid to partner with the SNCF to Cegetel, Bouygues rented fiber optic lines from the les Voies Navigables de France and planned to invest FFr 10 billion by 2003 in a fixed network of its own. Despite the firm's considerable political and financial resources and its strong international partners, Bouygues struggled to enter the market. 9 Télécom repeatedly delayed its entry into the market and expected to launch business service in March 1999 and residential service in May 1999.

***Suez-Lyonnaise***

The other major network based competitor, Suez-Lyonnaise, also experienced considerable difficulty entering the French telecom market. Suez-Lyonnaise planned to use its cable interests and new digital technologies to offer a bundled service of digital

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<sup>113</sup> René Russo, President of 9 Télécom SA "Bouygues va investir 10 milliards dans le téléphone fixe" Les Echos 10 December 1997

TV, high speed internet access, and voice telephony.<sup>114</sup> With relatively modest investments of FFr 2 billion over 5 years, Lyonnaise's strategy relied on using the high capacity, bi-directional cable network to offer bundled service in several metropolitan areas including Paris. However, because of the regulatory dispute over the use of the cable network, Lyonnaise Câble could only offer voice and internet service in Annecy where it launched a pilot project in 1996. Lyonnaise's problems like those of Bouygues highlighted the difficulty in entering a market in which France Télécom maintained a very strong position both in the market and in the political process.

The other entrants in the French market were niche players focusing on business users. Awarded a valuable single digital prefix, the independent French company Omnicom planned to compete with large international operators for business customers, particularly SMEs. With planned investments of FFr 750 million over five years, Omnicom hoped to use leased lines to offer service in 18 metropolitan regions by 2000.<sup>115</sup> AT&T's partner Siris and MCI/WorldCom both offered services to large multinational firms and the financial sector. As in the market for data communications and private corporate networks which had been liberalized for several years, foreign telecom operators took a cautious stance toward the French market and tended to remain on the periphery. To enter the residential market, both BT and Telecom Italia took minority stakes in French companies. The high price BT paid for its 26% stake in Cegetel and the large investments Telecom Italia committed to Bouygues<sup>116</sup> were widely seen as the price that foreign operators had to pay to enter the French market.

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<sup>114</sup> Interview with Gérard Mestrallet, President of Suez-Lyonnaise des eaux Figaro-Economie 23 November 1997

<sup>115</sup> "Omnicom va investir 750 millions de francs dans son réseau national" Les Echos 8 December 1997.

<sup>116</sup> "Bouygues investira 2 milliards en capital dans la téléphonie fixe" Les Echos 17 December 1997.

***France Télécom***

The final competitor in the French market was France Télécom. It is not surprising that the former monopolist's historically close relationship with the state benefited France Télécom in the liberalized French telecom market. The incumbent operator's demands for protection were met when those of other former monopolists such as Deutsche Telekom and British Telecom were not. Similarly, the strong ideas about moderating competition and preserving public service and international competitiveness resonated particularly loudly at France Télécom. As discussed before, France Télécom's responsibility for and commitment to public service gave it certain competitive advantages in the marketplace. Even as the market opened to competition, France Télécom remained very much the national champion. With a market capitalization of \$88.77 billion in 1998 and its GlobalOne alliance, France Télécom was the ninth largest telecom operator in the world and the only French telecom operator poised to play a leading role on the global stage.<sup>117</sup> After a year of competition, France Télécom's profits continued to rise and were expected to increase to over FFr 21 billion by 2000 thanks to the firm's international activities and the growth of the domestic market, particularly the mobile market.<sup>118</sup>

What was not anticipated by many observers was that France Télécom would be slow in embracing the internet and other new technologies. The close relationship with the state seemed to be a handicap as the operator adjusted to competition and rapid technological change. Even as CEO Michel Bon referred to the former monopolist as the "Net Company," the FT's strategy seemed cautious, even backward looking. France

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<sup>117</sup> Interview de Michel Bon, président de France Télécom. *La Tribune* 3 March 1997.



Télécom invested FFr 12 billion in its network in 1998, but its investments in broadband infrastructure and new IP technology remained limited. Although infrastructure investment was a priority for France Télécom's multimedia group, the incumbent operator said that it was not willing to bear the cost of building a modern network if it could be accessed by its competitors.<sup>119</sup> France Télécom was widely criticized by industry analysts and even Prime Minister Jospin<sup>120</sup> for failing to accelerate the transition from the profitable, but outdated Minitel system to the internet and for trying to bring the internet to Minitel with services such as Minitelnet which allowed its 400,000 subscribers to send and receive email using their Minitel terminal. Like other European telecom operators, France Télécom provided internet access and portal service through Wanadoo, the largest isp in the French market. However, as the former monopolist established its presence on the internet, it remained remarkably faithful to the Minitel model. France Télécom launched an electronic commerce site, Télécommerce, that mimicked the kiosque system. The firm also partnered with IBM to develop a "screenphone" a low cost terminal that would provide easy, fast internet access, while an intelligent network held software and user data. In an environment where no one knew which technologies would succeed and which would fail, France Télécom's strategy appeared rigid and too closely wed to certain technologies and a particular model of market development.<sup>121</sup>

There are two particularly compelling explanations for France Télécom and the new entrants' limited investments in the internet and new on-line services. First, both the regulatory framework and the "me too" strategy of the only real competitor to the

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<sup>118</sup> France Télécom. Rapport Annuel 1997. "France Télécom résiste bien à la concurrence" Le Figaro Economie 17 February 1998.

<sup>119</sup> Interview, France Télécom

<sup>120</sup> Jospin, Lionel. 1997. Préparer l'entrée de la France dans la société de l'information.

incumbent, Cegetel, both favor the development of moderate facilities based competition. The relatively limited competition in the French telecom market may reduce the pressure on both the telecom operators to diversify into new markets and make risky investments in new technologies. Second, when the state pulled back from infrastructure investment and picking new technologies, a void emerged that the risk adverse French private sector was unable to fill. As Levy argued in his analysis of the French government's unsuccessful attempt to decentralize industrial policy, when the *dirigiste* French state retreated, there was no other tradition to legitimate individual initiative.<sup>122</sup> Because the long tradition of state leadership in industry and technological innovation, French private interests lacked the entrepreneurial capacity to innovate and generate a new economic dynamism.

### *CONCLUSIONS*

The French telecom industry underwent a dramatic transformation as the traditionally closed national market opened to competition and the national champion, France Télécom was partially privatized. However, at the end of the long, highly politicized liberalization process, the state and the incumbent operator retained significant influence over telecom policy and the development of competition in the national market. Within the constraints of the European single market policies, the French government used its authority to construct a regulatory regime that limited competition and protected France Télécom. Although the French internet policy did not simply replicate dirigiste solutions of the past, the French state leveraged its considerable resources to promote investments in internet technologies and stimulate demand. France Télécom also kept its

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<sup>121</sup> "All eyes on the internet" FT Telecoms Survey *Financial Times* 18 November 1998.

strong grip on the marketplace as the new entrants failed to differentiate themselves from the incumbent and seemed to be positioning themselves for a cozy oligopoly. The ensuing case study of the German market examines how German policy makers and firms responded to the same external challenges of market liberalization and technological change.

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<sup>122</sup> Levy, Jonah D. 1999. *Tocqueville's Revenge : State, Society and Economy in Contemporary France*. Cambridge: Harvard University Press.

## **CHAPTER 5**

### **THE GERMAN TELECOM MARKET**

The Germany telecom market opened to competition on the same date as the French market in accordance with the European single market policies. As in France, market liberalization and privatization had faced considerable opposition from the unions and their political supporters. During the European policy making process, the French and German governments took similar positions, together slowing the Commission's ambitious timetable, but each gradually committing to introduce competition into the domestic market. In the marketplace, the former German monopolist, Deutsche Telekom and its French counterpart, France Télécom formed a strategic alliance Global One which included a 2% equity swap. Through this venture and their Atlas partnership the two incumbent operators provided international service to multinationals and started to build a pan-European internet protocol network. One of the largest new entrants in the German market, the industrial conglomerate Mannesmann held a 15% stake in France Télécom's strongest challenger, Vivendi's Cegetel. Another new German operator, Vebacom owned a stake in Bouygues' 9 Télécom. Finally, the number four players in both markets Viag Interkom and Suez-Lyonnaise both allied with British Telecom and participated in its Concert alliance.

Despite these strong political and business links, French and German policy makers and firms responded in very different ways to the pressures of liberalization, internationalization and technological change. The German regulatory framework established a market oriented regime that encouraged the rapid development of competition. In contrast to its alliance partner, France Télécom, Deutsche Telekom's

demands for protection were not met by national policy makers. For example, the regulator set interconnection rates which are among the lowest in the world precipitating a sharp fall in Deutsche Telekom's share price. The German government's internet policy also differed significantly from that of the activist French state. Although the internet developed slowly in Germany, the German government initiated only limited industrial policy initiatives. Moreover, both the Federal and the regional governments adopted controversial multimedia laws to regulate new on-line services. Finally, large powerful utility companies and industrial conglomerates such as Veba, RWE, Viag and Mannesmann entered the German market and invested heavily to build their own networks to compete with Deutsche Telekom. Aggressive resellers such as MobilCom also entered the national market offering customers very low long distance rates on lines leased from Deutsche Telekom.

Competition in the German telecom market developed much more quickly than expected as the former monopolist, Deutsche Telekom lost an estimated 30% of the long distance market and cut its retail prices by as much as 70% during 1998. To understand the development of competition in the German market and why it differed from France, this chapter analyzes both the German regulation, industrial policy and pattern of market entry and the liberalization process from which they emerged.

## **MARKET LIBERALIZATION AND PRIVATIZATION**

### ***Slow negotiated reform***

The process that led up to the full liberalization of the German telecom market on January 1, 1998 was characterized by slow, negotiated reform. Historically the Deutsche Bundespost shared power over telecom policy and the technological development of the sector with several political and industry actors including the powerful German telecom equipment manufacturers and the DPG union. Any major change in the German public telecom monopoly required a constitutional amendment approved by a two thirds majority in both houses of parliament. As a result, the political parties and the regional Länder governments represented in the Bundesrat both exercised considerable control over the process of market liberalization and privatization. Due to the traditional fragmentation of telecom policy and the constitutional requirements, the progressive market opening and partial privatization of Deutsche Telekom was shaped by formal and informal bargaining among a diverse group of public and private sector actors. A gradual realignment of domestic interests in favor of liberalization allowed the reforms to progress slowly as concessions made to the postal unions and conservative policy makers. In the decentralized policy making process, the powerful new entrants wielded considerable political influence which made it difficult for the incumbent to win protection. The result of this negotiated reform was a pro-competitive regulatory regime accompanied by elaborate social safeguards and strong political oversight.

### ***Fragmented policy making***

Under the traditional monopoly regime, authority over German telecom policy was divided among a diverse group of actors from different parts of the government, industry and labor and any major change in policy any major change was negotiated

among these various interests. According to the German Basic Law (Grundgesetz), the provision of telecom infrastructure and service was the exclusive domain of a federal administration, the Deutsche Bundespost (DBP).<sup>1</sup> The DBP was headed by the Minister for Post and Telecommunications who was responsible for day to day operations and regulation. Several other Federal Ministries also played active roles in the Bundespost's affairs. The Bundespost's budget and its borrowing on capital markets were subject to approval by the Ministry of Finance. In lieu of taxation, the DBP contributed 10% of its annual revenues to the federal budget, thereby giving the Finance Ministry a direct financial interest in the operator's performance.<sup>2</sup> Furthermore, the Ministry of Economics had to approve the Bundespost's tariffs and exercised considerable control over the introduction of new services. Because a majority of the workforce were civil servants (*Beamte*), the Interior Ministry oversaw all employment issues at the DBP. Finally, the Research and Technology Ministry supported research and development in communication and information technologies.

In addition to these federal ministries, the Bundespost's Administrative Council (*Postverbeitungsrat*) also oversaw the DBP's operations and helped to shape national telecom policy. The Council's twenty four members represented the Bundestag, the Bundesrat, the unions, telecom equipment industry and several national business associations. Although the Council rarely exercised its broad veto powers over the Post Minister's decisions, the Minister had to take into account the Council's position when

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<sup>1</sup> Grundgesetz Artikel 87

<sup>2</sup> In 1985 the DBP paid DM 4.6 billion directly to the Federal budget. If it had paid VAT instead, a large percentage of the tax revenue would have gone to the Länder rather than the Bund.

making policy choices, particularly on budgetary and pricing issues.<sup>3</sup> Of the groups represented on the Council, the unions and the large German equipment manufacturers had the most formal and informal influence over the DBP's activities and the Federal government's telecom policy. The powerful Deutsche Postgewerkschaft (DPG) represented 80% of the DBP's more than 500,000 employees and 90% of the works council members.<sup>4</sup> The well organized union not only participated actively in personnel and organizational decisions at the DBP, but also wielded considerable political power at both the national and regional levels.

The large German telecom equipment manufacturers also played an important role in the policy making process and made key choices about investments in new technologies. The powerful "court suppliers" (Hoflieferanten) maintained close contacts with the Post Ministry, the Bundespost and its research arm the Fernmeldetechnisches Zentralamt (FTZ) both on a bilateral basis and through the ZVEI industry association.<sup>5</sup> Traditionally, the Bundespost's single technology policy (Einheitstechnik)<sup>6</sup> for switching and transmission equipment underpinned the close cooperation between the monopoly operators and its domestic suppliers. Even after the single technology policy was abandoned in the early 1980s and competition increased among the German equipment

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<sup>3</sup> Cawson, Alan, Kevin Morgan, Douglas Webber, Peter Holmes, and Anne Stevens. 1990. *Hostile Brothers : Competition and Closure in the European Electronics Industry*. Oxford: Clarendon Press.

<sup>4</sup> The Deutsche Postverband (DPV) and the Christliche Gewerkschaft Post represented 10% of the Bundespost's workforce.

<sup>5</sup> The court suppliers were Siemens, SEL, PKI, AEG-Telefunken, Detewe, TN Telenorma and ANT Nachrichtentechnik. Together these firms accounted for 80% of the German telecom equipment industry's production capacity.

<sup>6</sup> Under the single technology policy, the DBP used one type of switch or transmission technology throughout its network. The technologies were developed by Siemens and produced by several of the court suppliers under Siemen's license. For more information see Cawson, Alan, Kevin Morgan, Douglas Webber, Peter Holmes, and Anne Stevens. 1990. *Hostile Brothers : Competition and Closure in the European Electronics Industry*. Oxford: Clarendon Press.



suppliers, Siemens and the other large equipment manufacturers retained their considerable influence over national telecom policy.

Because of this fragmented authority, the Post Minister's policies on a wide range of issues including pricing, investments in new technology and working conditions were the result of formal and informal bargaining among these diverse interests. Most decisions were first negotiated behind the scenes so that a compromise could be reached before they were made public.<sup>7</sup> The decentralized, negotiated approach to telecom policy contrasted sharply with the centralized French regime, particularly in the formulation and execution of technology policy. Traditionally the German government played a relatively limited role in the technological development of the telecom industry and never embraced the state-led, *grand projet* approach to industrial modernization of their French counterparts.<sup>8</sup> When the Federal government tried to play a more active role in the innovative process, the fragmented authority over the telecommunications made it difficult for policy makers to execute a top-down technology strategy.<sup>9</sup> For example, the government's efforts to support the launch of Birchemtext, a similar technology to the French Minitel, led to an embarrassing failure and highlighted the limitations of the state leadership in the diffusion of technological innovation.<sup>10</sup>

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<sup>7</sup> Neumann, Karl-Heinz, and Bernhard Wiesland. 1988. Competition and Social Objectives : The Case of West German Telecommunications. In *Diskussionsbeiträge zur Telekommunikationsforschung*. Bad Honnef: WIK. Changes in tariffs were discussed among the BMPT, BMWi, the Administrative Council and the DIHT. When the DBP increased its rates in 1974, it agreed to introduce special tariff for poor and off peak reductions to quell any political opposition.

<sup>8</sup> Werle, Raymund. 1990. *Telekommunikation in der Bundesrepublik : Expansion, Differenzierung Transformation*. Frankfurt: Campus Verlag.

<sup>9</sup> Schneider, Volker, and Raymund Werle. 1991. Policy Networks in the German Telecommunications Domain. In *Policy Networks*, edited by B. Marin and R. Mayntz. Frankfurt am Main: Campus Verlag.

<sup>10</sup> For a comparative study of the introduction of videotext in Germany, France and the UK see Mayntz, Renate, and Volker Schneider. 1988. The Dynamics of System Development in a Comparative Perspective : Interactive Vidoetex in Germany, France and Britain. In *The Development of Large Technical Systems*, edited by R. Mayntz and T. P. Hughes. Frankfurt: Campus.; Schneider, Volker, and Thierry Vedel. 1991.

### ***Pressures for Reform***

Although the Deutsche Bundespost maintained a high quality network, during the 1970s some policy makers and business users began to question the monopolist's ability to keep up with the rapid innovations in advanced services.<sup>11</sup> These concerns about the availability of new technology provided a window of opportunity for the early advocates to pursue telecom reform and market liberalization. One of the strongest proponents of telecom liberalization was the liberal Free Democrat Party. Committed to promoting free market competition and limiting state intervention in the economy, the FDP argued that liberalization would improve the performance of the DBP and allow a vibrant market for advanced services to develop.<sup>12</sup> During the late 1970s, the FDP had used its control of the Federal Economics Ministry (BMWi) to limit DBP's attempts to extend its terminal equipment monopoly. The FDP's efforts were encouraged by the computer industry, particularly Nixdorf and IBM who vehemently attacked the existing monopoly.<sup>13</sup> As the dispute intensified, the Federal monopoly commission (Monopolkommission) studied the German telecom equipment market and in 1981 recommended that competition be introduced in both equipment and services.<sup>14</sup> By 1982 Helmut Kohl's coalition government which included the FDP made an election pledge to reform the DBP. Kohl's

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The Dynamics of Videotex Development in Britain, France and Germany : A Cross National Comparison. *European Journal of Communication* 6:187-212.

<sup>11</sup> In the mid 1970s, Witte chaired the Commission for the Development of Telecom Systems which studied the technological changes in the sector and their impact on the DBP. The DBP also commissioned an internal review by McKinsey & Company. The review found that the quality of the DBP's basic services was high, but its offering of value added services and new technologies was limited by international standards.

<sup>12</sup> Their arguments in favor of reform drew on the work of several liberal German economists, such as Mestmaker and Kneips. For an overview of the economic debates on telecom reform in German see Pfeiffer, Gunter, and Bernhard Wieland. 1990. *Telecommunications in Germany : An Economic Perspective*. Berlin: Springer-Verlag.. As discussed further below they were also influenced by the movement toward telecom liberalization in the United States.

<sup>13</sup> VDMA position paper. Interviews, Germany 1997.

appointed Schwarz-Schilling, an outspoken critic of the monopoly regime, as his first Post Minister. Schwarz-Schilling and his supporters argued that organizational reform and market liberalization would improve the Bundespost's efficiency and facilitate the diffusion of high quality, innovative services.

According to several insider accounts, the liberalization of the telecom markets in the UK, the US and Japan intensified the domestic movement for telecom reform in Germany. The experience of telecom liberalization in these three major markets added weight to German reformers arguments about the limitations of the monopoly regime and the positive impact of competition on prices and the availability of advanced services. German policy makers carefully studied the different models of reform adopted in the US, the UK and particularly Japan as they formulated their own approach to market liberalization.<sup>15</sup> At the same time, the liberalization of foreign telecom markets led to an important shift in the position of the German equipment industry from opponents to supporters of domestic telecom reform. The large, export-oriented German telecom equipment manufacturers feared that unless the German government undertook similar market opening reforms, they would be excluded from these three major markets which represented more than 65% of the world market for telecom equipment. While Siemens and the other major German equipment manufacturers started to lobby for telecom reform, the US government also pressured the German government for reciprocal market opening.

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<sup>14</sup> Monopolkommission. 1981. Die Rolle der Deutschen Bundespost im Fernmeldewesen. Baden-Baden: Nomos.

<sup>15</sup> Interviews, Germany 1997. The German government studied the Japanese experience with telecom liberalization carefully and sent a fact finding mission to Japan. German policy makers believed that the Japanese approach to industry was more similar to their own than the market oriented anglo-saxon model.

Unlike the UK where the financial service industry lobbied actively for telecom reform, German business users did not play a major role in the emerging coalition for telecom liberalization. The limited involvement of the German business community in the telecom reform process in large part reflected the concessions that the DBP made to large business users. For example, the DBP included its critics IBM and Nixdorf in the exclusive club of its court suppliers and offered large German banks preferential rates. To dampen the pressure for reform, the DBP continued to provide relatively good quality basic services and allowed a gray market for competitive advanced data services to develop.<sup>16</sup>

### *Defenders of the status-quo*

While the new conservative-liberal coalition government advocated telecom reform, the influential DPG union, the opposition SPD party and Kohl's coalition partners in the CSU vehemently defended the Deutsche Bundespost's monopoly. Citing the example of the UK, these groups feared that liberalization would have a negative impact on employment and distributional equity. The DPG argued that competition would precipitate massive workforce reductions and threaten the generous civil servant benefits most DBP employees enjoyed. Because the DPG represented both the telecom and postal employees, union leaders were particularly concerned that a separation of the two branches on the DBP would reduce the opportunities for cross subsidization and lead to a major restructuring of the loss-making postal service.<sup>17</sup> The DPG mobilized its considerable resources and launched a series of major protests in October 1986. Supporting the union, the SPD and Bavarian CSU also contended that market oriented

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<sup>16</sup> Interview, Germany 1997.

reforms of the traditional PTT monopoly would jeopardize uniform tariffs and the provision of telecom and postal services in rural areas. The political parties also recognized that liberalization would expedite tariff rebalancing which was very unpopular among voters whose residential phone bills would increase.<sup>18</sup> Länder leaders, including many from Kohl's CDU who had a strong rural electoral base, shared these same concerns and remained wedded to the status quo.<sup>19</sup>

### ***Postal Reform I -- compromise among competing interests***

Confronted with this opposition and the constitutional constraints, the proponents of liberalization recognized that a big bang approach was not possible and began to negotiate a gradual reform. In 1985 Chancellor Kohl established the Witte Commission bringing together representatives from all the major interests groups to study ways to improve the performance of the national telecom monopoly within the existing constitutional constraints.<sup>20</sup> After nearly two years of hearings and debate, the Witte Commission made considerable progress in building support for organizational reforms and limited market opening. Nevertheless, the margin for reform remained limited. The Commission failed to reach an agreement on the controversial issue of infrastructure competition and the representatives from the DPG and the SPD continued to defend the existing regime.<sup>21</sup> In its final report, the Commission recommended restructuring the

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<sup>17</sup> Morgan, Kevin, and Douglas Webber. 1986. Divergent Paths : Political Strategies for Telecommunications in Britain, France and West Germany. *West European Politics* (October):56-79.

<sup>18</sup> Tariff rebalancing reduces national and international long distance rates, but raises the subscription fees and local call rates. In most European markets, the average household made relatively few long distance calls prior to market liberalization, so rebalancing led to an increase in their monthly bill.

<sup>19</sup> Schmidt, Susanne K. 1991. Taking the Long Road to Liberalization : Telecommunications Reform in the Federal Republic of Germany. *Telecommunications Policy* 15 (June):209-222.

<sup>20</sup> The major political parties, the Länder, business users, equipment manufacturers, the DPG and several business associations.

<sup>21</sup> The Commission was deadlocked on the issue of infrastructure competition and the Chairman Witte did not use his authority to cast the deciding vote, although he was known to support liberalization. Interviews.

Bundespost and the liberalizing the markets for terminal equipment and value added services.<sup>22</sup>

The recommendations of the Witte report closely paralleled those of the European Commission's 1987 Green Paper.<sup>23</sup> In fact, the leading architect of the German telecom reforms, Eberhard Witte worked closely with Herbert Ungerer who headed the reform movement at the European Commission. The European and German efforts to liberalize telecommunications seemed to be mutually reinforcing. Kohl's government was committed to European integration and participated actively in the early discussions about creating a single European market for telecom equipment and services. In turn, the government's liberal economic stance in Brussels made it increasingly difficult to maintain a protected telecom monopoly at home.<sup>24</sup>

In 1989 after nearly two more years of negotiations, the German parliament adopted a somewhat diluted version of the Witte Commission's recommendations. The Postal Reform I (Poststrukturgesetz) separated the Bundespost into three public enterprises and allowed for the progressive liberalization of the markets for terminal equipment, value-added services and mobile communications. During the debates over the Postal Reform I, the SPD, the Länder, the Ministry of Interior and the Ministry of Finance all fought to defend their stakes in the existing regime. To win passage of the bill, the government made several significant compromises. For example, at the unions' insistence, the government created the Office for Welfare at the General Directorate level to oversee working conditions in all three enterprises and allowed the cross subsidization

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<sup>22</sup> Witte, Eberhard. 1987. *Neuordnung der Telekommunikation : Bericht der Regierungskommission Fernmeldewesen*. Heidelberg: R.v. Decker's Verlag.

of the postal services to continue.<sup>25</sup> The government also agreed to create the Infrastructure Committee which gave the political parties and the Länder formal influence over investments and the provision of mandatory services. The result of the prolonged multi-party negotiations was a cautious step toward liberalization that preserved the traditional social protections and ensured that labor and other vested interests would continue to play a role in national telecom policy. As policy makers balanced the competing interests, the compromises reached in the Postal Reform I and subsequent reforms were in many ways typical of the German social market economy.

### ***Postal Reform II -- a shift in interests***

Delaying any further discussion of full market liberalization, Kohl's government confronted the controversial issue of privatization in the Postal Reform II. The DPG steadfastly opposed privatization and staged a massive nation wide strike of more than 100,000 workers in 1993. Since the SPD continued to stand by the unions, the government struggled to obtain the two thirds parliamentary majority it needed to modify the constitution and proceed with privatization. Two factors eased this apparent deadlock. First, in an unprecedented move the government allowed the Bundespost employees to retain their civil service status, life-time employment guarantees and very advantageous benefits and pension schemes after privatization.<sup>26</sup> In addition, an

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<sup>23</sup> Commission of the European Communities. 1987. Towards a dynamic European economy: Green Paper on the development of the common market for telecommunications services and equipment. Brussels: Commission of the European Communities.

<sup>24</sup> Interviews, Germany 1997, Brussels 1996 and 1998.

<sup>25</sup> Telekom provided an average of DM1.9 billion per year to the Postdienst from 1990 to 1992.

<sup>26</sup> See a case study, "Deutsche Telekom : Political Liberalization and Organizational Response," prepared by Rebecca E. B. Weil and Christopher Delbrueck under the Supervision of Professor J. Nicholas Ziegler for the Sloan School of Management in 1995. The DPG also secured a commitment from Telekom and its subsidiaries to bargain with the union. equal employee representation on the supervisory board and new staff committee responsible for personnel matters headed by a worker representative and extension of contract conditions into the new Lander.

important shift occurred in the alignment of domestic interests. Several influential German power utilities and industrial conglomerates started to diversify into the telecom industry and compete with Deutsche Telekom. Using their considerable political power at the regional level, these powerful new entrants were able to amass support for liberalization and privatization from the Länder governments represented in the Bundesrat and other members of the SPD and the CSU. In addition, the large German telecom equipment manufacturers put their full support behind liberalization and privatization to secure access to foreign markets and growth in the domestic market.<sup>27</sup> As orders from Telekom declined, the equipment suppliers recognized that network competition would help to maintain domestic infrastructure investments.<sup>28</sup> Finally, a growing number of senior managers at the DBP Telekom supported privatization as means of gaining greater autonomy from the state. Faced with increased competition in the international market and certain segments of the domestic market, Telekom's senior management hoped that privatization would give them the flexibility to undertake difficult internal restructuring and expand into foreign markets.<sup>29</sup> In 1994 enough members of the SPD voted with the governing coalition to modify the German constitution and allow the privatization of Telekom to proceed. In 1995 Deutsche Telekom AG (DT) was established as a state-owned corporation and an initial public offering took place in late 1996.

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<sup>27</sup> Cawson, Alan, Kevin Morgan, Douglas Webber, Peter Holmes, and Anne Stevens. 1990. *Hostile Brothers : Competition and Closure in the European Electronics Industry*. Oxford: Clarendon Press.

<sup>28</sup> Interview, Germany 1997

<sup>29</sup> Interviews, Germany 1997



***Post Reform III -- negotiating the terms of competition***

With privatization underway, the government started negotiating the Post Reform III to open basic voice service and infrastructure to competition and create a new regulatory regime. Although the coalition for reform that ensured the passage of the Postal Reform II remained strong, there was considerable disagreement over how open the market should. The disputes over licensing, universal service and other regulatory issues pitted the liberal Telecom Minister, the Economics Minister and the powerful new entrants against Telekom, the Minister of Finance and many members of the SPD. In these debates, the decentralized policy making process diluted Telekom's political influence and allowed the powerful new entrants to win support both for full liberalization and for a pro-competitive regulatory regime. Growing evidence that competition benefited consumers and improved Telekom's performance strengthened the arguments for a pro-competitive regulatory regime.<sup>30</sup> For example, in the liberalized German mobile market prices plummeted and demand grew rapidly as Deutsche Telekom faced strong competition from Mannesmann.<sup>31</sup> Similarly, as the national public operator prepared to face competition, Telekom reduced the time horizon for the full digitalization of the national network from 2017 to 2007 to 1997. Finally in 1996 both houses of parliament passed the *Telekommunikationsgesetz* (TKG) and the German market opened to competition on January 1, 1998. In this and indeed in each stage of the liberalization process, the bargaining and political compromises produced both market oriented reform and strong social safeguards.

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<sup>30</sup> Interviews, Germany 1997.

<sup>31</sup> Quander used the mobile market as an example to persuade people of the advantages of competition; before the market was opened a line cost DM 270/ month, the phone was DM 8-10,000 and there were

**REGULATION IN THE LIBERALIZED MARKET**  
**Competition and Strong political oversight**

The *Telekommunikationsgesetz* of 1996 (TKG) established the regulatory framework which would govern competition in the liberalized German telecom market after January 1, 1998.<sup>32</sup> All of the key regulations defined in the TKG were subject to prolonged debate and difficult negotiations among several Federal ministries, regional governments, political parties, industry associations and firms. What emerged was a national regulatory regime that was at once pro-competitive and protected by strong political oversight. First, German telecom experts and policy makers considered the TKG to be among the most liberal telecom regimes in the world.<sup>33</sup> For example, the TKG allowed the government to issue an unlimited number of licenses to local, regional, national and foreign operators with virtually no restrictions. Furthermore, the TKG included neither asymmetric regulation which favored the new entrants as in the UK nor protectionist measures which shielded the incumbent as in France. Yet, at the same time, the TKG contained elaborate regulatory safeguards to protect against the abuse of market power and to ensure the availability of service at fair prices throughout Germany. The TKG also maintained strong political control over the new regulatory authority's application of the telecom law. In fact, the various ministries, the major political parties and the Länder which participated actively in the liberalization process, continued to wield significant power over regulatory policy in the liberalized market

This combination of pro-competitive regulation and strong political oversight was reflected in three components of the regulatory regime which were particularly important

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about 150,000 subscribers by 1996 there were 4 million, by 1997 7 million and the rates are as low as 19 DM/month and 10 DM for the phone.

<sup>32</sup> *Telekommunikationsgesetz* October 1996. Bundesministerium für Post und Telekommunikation.

to the development of competition in the German market : the independence of the regulator, interconnection and universal service. In the liberalized national market, the interconnection and universal service regimes encouraged the rapid development of price based competition; however, the significant political influence over regulatory decisions created a great deal of uncertainty about the future orientation of the national telecom regulatory regime.

### ***Independence of the regulator***

The new German regulatory authority, the Regulierungsbehörde für Telekommunikation und Post (RegTP), opened its doors on January 1, 1998 on the same day that the national telecom market opened to competition. The new telecom regulator was not an independent agency like the French ART or the British Oftel, but rather was part of the Ministry of Economics (BMW<sub>i</sub>).<sup>34</sup> The institutional structure of the RegTP was modeled on the well respected national competition authority, the Bundeskartellamt which was also subordinate to the BMW<sub>i</sub>. According to the TKG, the telecom regulator's duties included approving the dominant operators' prices, ensuring the provision of universal service and resolving disputes over interconnection. The Minister of Economics was responsible for setting the direction of telecom policy and had the legal authority to intervene in the regulator's decisions on the condition that it did so publicly.

As in France, the Minister's authority over regulatory policy created a potentially serious conflict of interest since the government remained Deutsche Telekom's majority

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<sup>33</sup> Interviews Germany 1997.

<sup>34</sup> To fulfill a campaign promise to reduce the number of Federal Ministries, Kohl abolished the Ministry of Post and Telecommunications (BMPT) on January 1, 1998 and transferred authority over the telecom industry to the Ministry of Economics (BMW<sub>i</sub>).

shareholder. Several of the new entrants expressed concern that the Minister of Economics would give in to political pressure from the Minister of Finance and use his authority to limit competition in the telecom market and maintain the value of the government's 74% stake in the former monopolist.<sup>35</sup> The movement of DT's share price since its IPO in 1996 provided compelling evidence of the linkage between the regulator's decisions and the value of Telekom's shares. For example, in October 1997, the announcement of low interconnection rates precipitated an 8% drop in the share price.<sup>36</sup> The following year, many investment bankers attributed the poor performance of Telekom's stock relative to other European PTOs to the combative relationship between the incumbent and the German regulator.<sup>37</sup> Because of the direct impact of the regulator's decisions on Telekom's share price, the German government had a strong incentive to ease the regulatory pressure on the former monopolist in order to maximize the revenues from future sales of the government's shares. According to some policy makers, the government even had a public responsibility to protect the revenue of the state and the investments of the German citizens who participated in the Telekom privatization.<sup>38</sup>

The political parties also had considerable influence over the new telecom regulator because of the composition of its governing board. When the first governing board was appointed in 1997, the government chose the three co-presidents from the

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<sup>35</sup> During the debates over the TKG, the CSU Minister of Finance which represented the state's shareholdings clashed frequently with the more liberal FDP Minister of Economics which prioritized the development of competition in the liberalized market. This conflict of interest was easier to balance when the Ministries of Finance and Economics were controlled by different parties, but became much stronger when the Ministers belonged to the same party in the new Socialist government. Interviews, Germany 1997.

<sup>36</sup> [www.dtag.de](http://www.dtag.de)

<sup>37</sup> "German stocks shunned" Telecoms Survey Financial Times 10 June 1998

<sup>38</sup> Interviews, Germany 1997.

three leading political parties. First, the President of the RegTP, Karl-Dieter Scheurle was a Christian Democrat from the BMPT who worked closely with Minister Bötsch. To the new entrants' dismay, Scheurle had also served on the supervisory board of Deutsche Telekom Mobile. Second, one of the Vice-Presidents was Arne Börnsen a Social Democratic member of the Bundestag who played a leading role in the liberalization process. Finally, the other Vice-President, Gerhard Harms, was a member of the FDP and a senior official at the Bundeskartellamt. The choice of members of the government to head the regulatory agency contrasted sharply with the British Oftel where the first Chairman was a professor of accounting, Sir Bryan Carsberg. Many industry experts expressed concern that the three presidents would be susceptible to pressure from their political colleagues to temper competition to protect Deutsche Telekom's share price or its employees. In fact, the FDP's original nominee to the governing board, Volker Schegel refused the job of Vice-President because he believed that the regulator was not sufficiently independent from political influence.<sup>39</sup> The ability of the national regulatory authority to make and enforce independent decisions was crucial to the development of competition in the liberalized market. Even within a liberal regulatory framework such as the TKG, the discretionary decisions that the regulator makes on rates, fees and terms of access are crucial to development of competition. In the liberalized market, the political influence of the Ministry of Economics and the parties represented on the RegTP's governing board both threatened the regulator's ability to promote competition and provide value and choice to consumers.<sup>40</sup>

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<sup>39</sup> "Setback for regulator" *Financial Times* 17 November 1997. Interviews, Germany, 1997.

<sup>40</sup> In interviews and policy statements, German policy makers identified competition and value for consumers as the primary goals of the regulator.

When the German market opened to competition, Scheurle, the Chairman of the new telecom regulator, promised that he had the "very strong intention to be a very strong regulator."<sup>41</sup> In the first several months after its inception, the RegTP did indeed decide against Telekom on several key issues. For example, the regulator blocked the high fee that Telekom wanted to charge for customers for switching to a rival operator as their pre-selected long distance carrier. Telekom proposed a charge of DM 98 which was four times the average fee for changing operators in a competitive market and widely considered to be anti-competitive.<sup>42</sup> To make it easier for customers to switch operators, the regulator also ruled that DT could not charge customers for keeping their telephone number when they pre-selected a different carrier.

Then in November 1998, Werner Müller, the Minister of Economics in Gerhard Schröder's newly elected Socialist government intervened in an important regulatory decision. Müller ordered the regulator to delay its determination on the charges that Telekom could levy for competitors to access its local network. Deutsche Telekom wanted to charge competitors DM 47.26 a month for access to the so-called "last mile" of its network leading to the customer premise, but the regulator was expected to announce rates of less than half that level.<sup>43</sup> The government advised Telekom to revise its offer and Telekom submitted a second offer of DM 37.30. In December, the regulator set a monthly charge of DM 25.40 which was lower than Telekom requested, but still higher than originally anticipated. In fact, this charge levied on Telekom's competitors was 18% above the price of DM 21.29 that the incumbent charged its retail customers for a monthly line rental. As a result, it would be very difficult for the new entrants to make a

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<sup>41</sup> Ralph Atkins, "Honeymoon appears to be over" Germany Survey Financial Times 18 November 1997.

<sup>42</sup> "Wrung out" The Economist 7 February 1998

profit in the local call market. The local access charges were strongly criticized by the new entrants and industry experts for blocking the development of competition in the local loop where Telekom remained dominant and prices were still high. Müller had publicly expressed alarm about the impact of the liberal regulatory regime on Deutsche Telekom and his intervention was widely seen as a blatant effort to protect the former monopolist.<sup>44</sup> Müller's intervention in the regulator's pricing decision set a dangerous precedent and heightened fears that the Minister of Economics would take steps to limit the fierce competition in the long distance market as discussed further below.

The new regulatory authority's ability to promote competition and to create a stable, predictable environment for investment was further undermined by the numerous appeals taken to the German courts. According to the TKG, both the incumbent and the new entrants could challenge the regulator's decision in a designated court in Köln and the appeals court in Münster. An appeal took a great deal of time, requiring four months for an interim injunction and up to two years for a wholesale procedure. Critical decisions on issues such as unbundled access and interconnections rates were all appealed in the German courts and remained unresolved more than a year after the market opened to competition. This extended appeals process made it very difficult for operators to plan their costs and commit to risky investments. Moreover, some industry experts doubted the ability of the designated administrative courts to judge the complex technical details of the telecom cases.

The regulator's authority was also checked by the European Commission and surprisingly the American FCC. Mannesmann and o.tel.o brought several complaints

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<sup>43</sup> "German telecoms ruling halted" Financial Times 28-29 November 1998.

against both the German regulator and Deutsche Telekom before the European competition authorities. For example, the new entrants successfully challenged the regulator's decision to allow Deutsche Telekom to offer deeply discounted rates to large business users just before the national market opened to competition. The Commission also investigated a claim by Bertelsmann and AOL that Telekom used its market dominance to stifle competition in the market for internet access provision by offering favorable rates to its own T-Online service. The new entrants found that the European Commission was more responsive to their complaints since it did not have the same conflict of interest as the German government did.<sup>45</sup> Moreover, because of its strong competition authority, the European Commission had considerable leverage over Deutsche Telekom and the incumbent's supporters in the German government. The Competition Directorate (DG IV) was investigating Telekom's ownership of the majority of the German cable television network and had the power to order Telekom to divest its cable holdings if they constituted a barrier to competition in the telecom market. The Commission also reviewed two controversial alliances, GlobalOne between Deutsche Telekom, France Télécom and Sprint and a digital television venture between Deutsche Telekom, Bertelsmann and Kirsch. The approval of both of alliances was conditioned on the amount of competition Telekom faced in the domestic telecom market; as a result, the Commission could insist that Telekom allow more competition to develop if it wanted to proceed with its strategic alliances. Similarly, when the American government reviewed the GlobalOne alliance, Mannesmann appealed to the FCC to pressure the German government to take a tougher approach to regulating Deutsche Telekom's prices.

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<sup>44</sup> Frederick Stüdemann "Germany: Changing times and fortunes" Telecoms Survey Financial Times 18 March 1999



Finally, the telecom regulator shared authority over the internet and new on-line services with the *Länder* governments. According to the German constitution, mass media was regulated by the *Länder* whereas individual media fell under the jurisdiction of the Federal government. This division of labor was designed to guard against centralized control of the media after the experience of the Third Reich; however, as telecommunications and broadcasting technologies converged, the distinction between mass media and individual media became ambiguous at best. Rather than resolving this jurisdictional dispute, the Bund and the *Länder* passed two parallel laws regulating multimedia technologies : the Federal Multimedia Law and an interstate agreement on multimedia.<sup>46</sup> The Federal law asserted control over *tele-dienste* defined as interactive services used by individuals. The Media Interstate Agreement regulated *media-dienste* which like broadcasting were considered mass media. Although the two laws established identical rules for *tele-dienste* and *media-dienste*, the distinction between the two types of services was very confusing and promised to become more so as new multimedia services developed.<sup>47</sup> Moreover, the two laws were identical at the time of their enactment in August 1997, but the Federal law contained a provision for revisions in 1999. There was no agreement on which law would prevail if revisions to the Federal law conflicted with the interstate agreement.

The many, competing influences over the German regulatory policy created a great deal of uncertainty about future regulatory decisions and made it difficult for the operators to project their revenues and commit to costly investments in infrastructure and

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<sup>45</sup> Interviews, German 1997.

<sup>46</sup> Informations- und Kommunikationsdienste-Gesetz. June 13, 1997. BMBF. [www.iid.de](http://www.iid.de)  
Mediendienstestaatsvertgag der Länder

new technologies. Moreover, the strong political influence over the regulator coupled with Schröder's government's willingness to intervene in Deutsche Telekom's favor created serious doubts the regulator's ability to maintain its liberal stance toward competition. The following discussion of interconnection regulations serves as an other example of how the risk of political intervention threatened the stability of the pro-competitive German regulatory regime.

### ***Interconnection***

The German interconnection regime and the initial pricing decisions encouraged the development of competition, particularly price-based resale.<sup>48</sup> The TKG stipulated that interconnection rates should be fixed through commercial agreements among operators. However, Deutsche Telekom and the new competitors failed to reach agreements on either the rates or terms of interconnection and petitioned the regulator to do so. According to the TKG, the regulator had ten weeks to establish the prices for interconnection after a petition was made. In October 1997, the acting regulator, the Minister of Post and Telecommunications, Bötsch, set the interconnection rates at a very low average rate of 2.7 pfennigs per minute.<sup>49</sup> When the German market opened to

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<sup>47</sup> For example, an on-line edition of a newspaper would fall under the Länder's jurisdiction; however, it is unclear whether a portal that provided users with customized news updates would be an individual communication or mass media.

<sup>48</sup> The rules governing interconnection were elaborated in the TKG and two ordinances : the Netzzugangsverordnung (NZV) (November 1996) and the Telekommunikations-Entgeltregulierungsverordnung. (August 1996). Bundesministerium für Post und Telekommunikation.

<sup>49</sup> The Post Minister's decision to set such a low rate for interconnection came as a surprise not only to Deutsche Telekom, but also to many of the new entrants. According to Ministry officials and industry observers the low rates reflected Bötsch's desire to promote competition and provide a clear signal to Deutsche Telekom and its shareholders in the Ministry of Finance that the regulator would be aggressive and liberal. In addition, the politically powerful new entrants may have counterbalanced Deutsche Telekom's demands for a more restrictive interconnection policy. Finally, the German rates fall just within the European Commission's recommended range and according to some analysts reflect the government's desire to support the European single market policies. As discussed further below after regulatory authority was transferred to the politically controlled RegTP and Schröder's left of center government came to power, the regulator began to reconsider these low rates. Interviews, Germany 1997.

competition a few months later, these low interconnection rates would allow the new entrants to undercut DT's long distance prices by a significant margin and gain market share quickly. The regulator also decided that the same low interconnection rates applied to all service providers, including resellers such as Mobilcom which did not own any infrastructure. The lack of restrictions on resale in the German market also encouraged the rapid development of price based competition, but tended to discourage investments in infrastructure and new technology. Finally, the regulator required Deutsche Telekom to offer its competitors unbundled access to its network. Unbundled access would allow competitors to pay for only those components of the incumbent's network that they needed and thus tended to promote competition as well.<sup>50</sup>

The regulator's interconnection determination came under fire from all sides. Both the incumbent and the new entrants attacked the lack of transparency in the decision making process and the methodology that the regulator used to determine the interconnection prices. The TKG outlined two methods for setting interconnection tariffs : cost-oriented modeling and international comparisons. Rather than using explicit cost determinations, the regulator set the 1998 interconnections rates using highly discretionary international comparisons alone.<sup>51</sup> Telekom's supervisory board including Jürge Stark from the Ministry of Finance voted unanimously to challenge the low interconnection rates.<sup>52</sup> Telekom claimed that the rates failed to take into account the

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<sup>50</sup> o.tel.o registered a complaint with the regulator in 1997 when DT refused to offer unbundled access to its network. The regulator concurred that DT had a legal obligation to provide unbundled access to its competitors.

<sup>51</sup> The regulator selected ten countries and calculated a weighted average of local and long distance tariffs for each. To set the German rates, the regulator then took the average of the ten countries' average rates and the three cheapest countries' average rate. Neither Telekom nor the new entrants were able to verify the source of the data, the criteria for selecting the ten countries or the weighting techniques. Many German industry experts argued that this method could be used to produce any results that the regulator wanted.

<sup>52</sup> "Deutsche Telekom to challenge Bonn ruling" Financial Times 19 September 1997.

historic cost of the network, notably the incumbent's massive investments in the former East Germany. More than a year later, this case was still pending in the courts.

The greatest beneficiaries of this liberal interconnection regime seemed to be low price resellers such as MobilCom which gained an estimated 10% of the German long distance market in 1998. As Deutsche Telekom lost up to 30% of the German long distance market and prices tumbled by as much as 70%, the low interconnection rates and liberal policy toward resale were attacked not only by the incumbent, but also by the network based entrants, Mannesmann, o.tel.o and Viag.<sup>53</sup> In November 1998, the Minister of Economics, Werner Müller, called for a reevaluation of the regulatory regime as he expressed alarm about impact of fierce competition on Deutsche Telekom. Müller and other political leaders feared that the price war in long distance market would jeopardized the billions of DM invested by Telekom, Mannesmann and o.tel.o in infrastructure. Müller told parliament that liberalization "cannot lead to an imbalance between those companies that invest in their own network and those who simply use these networks for the carriage of their minutes of conversation."<sup>54</sup> Rainer Funke, a state secretary in the Justice Ministry and an author of the TKG echoed this sentiment, complaining that because of low interconnection rates "we have taken riches from DT and made Mr. Schmid of MobilCom a billionaire."<sup>55</sup> Muller's intervention in the setting

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<sup>53</sup> "Telekom chief hits out on regulation" Financial Times 3 November 1998. Ron Sommer argued that the German regulations allowed competitors to win market share in a dangerous way and warned that the escalating price war would have an adverse effect on shareholder value. "I do not think that it is the role of DT to fire people because we have to subsidize companies that do not invest." In addition to job cuts, the CEO warned of reduced investments. He asserted that Germany's liberal framework was unique in its openness to resale and competition.

<sup>54</sup> Frederick Stüdemann, "DT slashes its prices" Financial Times 13 November 1998

<sup>55</sup> Ralph Atkins, "All lines engaged" Financial Times 7 August 1998

of the local loop access rates led some experts to believe that the government would place restrictions on resale in order to temper the rapid development of competition.<sup>56</sup>

### ***Universal service***

The German approach to universal service differed both from the European Union recommendations and the policies in place in most other liberalized markets. During the debates over the TKG, universal service was one of the most controversial issues. After a great deal of bargaining and negotiation between the liberal Post Minister and the SPD and the regional governments, the TKG established a universal service regime that was market oriented, but contained elaborate social safeguards in case market mechanisms failed to produce fair prices and access to technology for consumers.<sup>57</sup> In the first instance, universal service was left to the market and no compensation was offered to the operators providing universal service. According to the law, if and only if the market failed to provide universal service in a given area, then the regulator could assign the universal service obligation to the dominant operator or auction the obligation to the operator which required the lowest compensation. At the SPD's insistence the German universal service obligation included not only the provision of basic service, but also access to ISDN lines for all customers who requested it. Although the TKG asserted that the universal service obligation should keep up with the latest technological advances, there was little discussion of extending the obligation to include internet access.

The result of this unusual policy was that Deutsche Telekom as the dominant operator was likely to provide universal service to costly remote areas without compensation for the foreseeable future to avoid initiating the potentially damaging

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<sup>56</sup> "Call for rethink on German telecoms" Financial Times 5 November 1998

auction process. According to a senior government advisor, the logic behind the reliance on market mechanisms was that universal service provision conferred certain benefits on the dominant operator in terms of reputation and access to customers and that Telekom would be unlikely to relinquish its obligation. Indeed, Telekom officials themselves admitted that the firm would not ask for compensation.<sup>57</sup> Deutsche Telekom's failure to win any compensation for providing universal service contrasted sharply with France Télécom which received high payments and expansive benefits in exchange for its public service obligation.

To summarize, the national regulatory regime established by the TKG encouraged the development of competition in the liberalized telecom market. The low interconnection rates and liberal resale policy allowed the new entrants to undercut Telekom's prices significantly and precipitated a price war. The universal service regime also favored the new entrants by denying Telekom compensation for providing a high level of universal service throughout the country. In this tough regulatory environment, the former monopolist lost an estimated 30% of the long distance market after only one year of competition. Although the rapid development of competition provided consumers with low prices and greater choice in operators, it also raised fears that the German government would use its considerable influence over the regulator to intervene and ease the competitive pressure on Deutsche Telekom and the large network based competitors.

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<sup>57</sup> Telekommunikations-Universaldienstleistungsverordnung (TUDLV) February 1997. Bundesministerium für Post und Telekommunikation.

<sup>58</sup> To receive compensation, Telekom would have to provide evidence of a loss. If Telekom did show that it constituted a loss then the regulator can auction off compensation. DT was aware of the fact that the compensation awarded in the auction would come from a universal service fund of contributions paid on a nation wide basis even if compensation was only offered in one region and that all firms with more than 4% market share would contribute to the fund in proportion to their nation wide market share; as a result even if DT receives compensation or wins the auction, the greatest share of this compensation will be paid by

**PROMOTING THE INTERNET**  
**Regulation and Industrial Policy**

Internet penetration rates in Germany were growing, but remained much lower than those in the United States or Scandinavia.<sup>59</sup> In contrast to France where the relatively slow development of the internet created a political storm and motivated a high-profile state-led campaign to promote internet usage and the development of on-line services, the German Federal government did not try to lead a national movement to encourage the growth of the internet. The German government's approach to the internet combined regulation and very limited industrial policy initiatives to boost demand and promote innovation.

In 1995 the government established the Council for Research, Technology and Innovation, which brought together members of government, industry and different interests groups to study the development of the information society in Germany.<sup>60</sup> The Council published a report which assessed the impact of the internet and new multimedia services and made broad recommendations for public and private action.<sup>61</sup> Building on the Council's report, the Federal government adopted an action plan, *Info 2000 : Germany's Way to the Information Society* in February 1996.<sup>62</sup> The action plan enumerated the government's objectives and put forward several broad areas for action. Focusing heavily on job creation and industrial competitiveness, the government emphasized the importance on using the internet and new on-line services "to modernize

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DT itself; there was also a real danger that a competitor would win the auction and that DT as the largest contributor to the fund would finance its own competitor's infrastructure investment.

<sup>59</sup> Forrester. 1998. *European New Media Strategies*; [www.forrester.com](http://www.forrester.com).

<sup>60</sup> The twenty member Council included representatives from industry, trade unions, academia, four federal ministries and the state of Bavaria.

<sup>61</sup> [www.iid.de](http://www.iid.de)

<sup>62</sup> Bundesministerium für Wirtschaft. 1997. *Info 2000 : Deutschelands Weg in die Informationsgesellschaft*. Fortschrittsbericht der Bundesregierung. Bonn: Bundesministerium für Wirtschaft. [www.bmwi.de](http://www.bmwi.de)

Germany and ensure that it remains attractive for investors in the future."<sup>63</sup> Some policy makers hoped that electronic commerce and new information technologies could be harnessed to help German manufacturers increase productivity and maintain quality in the face of competition from foreign low wage producers.<sup>64</sup> A few regional leaders, such as Bavarian President Stoiber effectively rallied local citizens and businesses around the economic opportunities the internet offered. However, on the national level the *Info 2000* initiative lacked a top level political champion such as American Vice-President Gore or French Prime Minister Lionel Jospin and did little to spur public or private sector action.

To create awareness about the opportunities and the risks associated with the internet and new on-line services, the government launched a broad social dialogue known as Forum Info 2000 in October 1996.<sup>65</sup> Under the leadership of the BMWi, BMBP and the BDI industry association, Forum Info 2000 brought together more than 180 private associations representing industry, trade unions, scientists and an exceedingly broad array of societal groups to discuss the social and economic consequences of these new technologies. The Forum and its nine working groups focused on a range of economic, social and cultural questions similar to those being raised by the European Commission and other national governments.<sup>66</sup> The working groups may have facilitated

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<sup>63</sup> Bundesministerium für Wirtschaft. 1997. *Info 2000 : Deutschelands Weg in die Informationsgesellschaft. Fortschrittsbericht der Bundesregierung.* Bonn: Bundesministerium für Wirtschaft.

<sup>64</sup> Interviews, Germany 1997. At the time, there was a great deal of concern about the flood of investment by German firms in low wage countries in Eastern and Southern Europe and the progressive decline in inward foreign direct investment. See for example, Albert, Michel. 1993. *Capitalism vs. Capitalism.* New York: Four Walls Eight Windows.

<sup>65</sup> [www.forum-info2000.de](http://www.forum-info2000.de)

<sup>66</sup> The six topics of the Forum were employment, electronic commerce; regional development; education; society and culture; and public administration. The nine working groups were : New modes of work and employment; Electronic commerce and SMEs; Sustainable development and environmental protection; New challenges for education and computer literacy; Elderly people; Multimedia applications for cities; Telemedicine and health care; Arts and Culture; Women. Some topics, notably the environment, reflected distinctly German concerns, but most were very similar to other national and international discussions of multimedia technologies.



debate and helped create awareness, yet it remained unclear how the groups would present their findings, let alone implement any recommendations.

### ***Info 2000 initiatives***

Focusing primarily on regulation, the German federal government did not play an important role as a lead user of on-line service or devote significant resources to support the development of the internet in Germany as the activist French government did. Few within the government or the private sector advocated public investments in high capacity infrastructure or public intervention in technology choices and content creation. Yet, even in areas such as education and administrative reform where policy makers advocated state action, the government's policy initiatives were limited both in scope and funding. This lack of government activism was somewhat surprising given the emphasis put on the economic importance of the internet in policy documents such as the *Info 2000 Action Plan*.

The 1996 Action Plan did propose several initiatives in the domain of education and training. To connect German schools to the internet, the BMBF launched the *Schulen ans Netz* initiative in cooperation with Deutsche Telekom.<sup>67</sup> This program aimed to increase internet use in the Federal Republic, provide German students with media skills (*Medienkompetenz*) and facilitate communication among teachers and students throughout Germany and the world. Although the program received a good deal of publicity, *Schulen ans Netz* had a budget of only DM 35 million and a modest objective

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<sup>67</sup> For more information see [www.san-ev.de](http://www.san-ev.de) See also *Schulen ans Netz : Eine Initiative des Bundesministeriums für Bildung, Wissenschaft, Forschung und Technologie und der Deutsche Telekom AG*. 1997.

of wiring 10,000 of Germany's 41,000.<sup>68</sup> The efforts of the BMBF to promote internet use in German schools were constrained by the Länder's constitutional authority over education; however, this jurisdictional issue does not explain why the government could wire some schools and not others or why the budget was so small. Indeed, the government's policy received criticism from political leaders and industry observers who pointed to the United States where the federal government played an important role in wiring schools despite the state and local authority over education.<sup>69</sup>

The Federal government's programs to promote the use of the internet by Germany businesses also had only limited impact. For example, the federal government launched the *Initiative Telearbeit* to encourage employees to tele-commute.<sup>70</sup> This joint initiative of the BMWi and the Ministry of Work and Social Order aimed to increase awareness about tele-working, clarify legal uncertainties and support pilot projects in Germany firms. In 1997, 410 companies participated in the *Initiative Telearbeit* and provided 1750 tele-working jobs, 500 of which were newly created jobs. Although some policy makers floated plans for specialized training and the tele-working centers with state of the art equipment and technical assistance, the Federal tele-work initiative had a total budget of only DM 25 million. Moreover, variations in the labor laws across the Länder made it very difficult to develop a coherent approach to tele-working.

The German policy makers took only modest steps to use the internet to make the Federal government itself more efficient and more transparent. In addition to improving

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<sup>68</sup> To recall, the French school on line initiative had a budget FF 15 billion and an objective of providing internet access to all French schools by 2000.

<sup>69</sup> Interviews, Germany 1997.

<sup>70</sup> Tele-work or tele-commuting refers to employees who work from their homes or from computer centers near their homes. Bundesministerium für Wirtschaft, and Bundesministerium für Arbeit und Sozialordnung. 1997. *Telearbeit: Chancen für Arbeitsformen, mehr Beschäftigung, flexible Arbeitszeiten*. Bonn: Bundesministerium für Wirtschaft.

the delivery of public services, such initiatives can help stimulate demand among private users and serve as positive examples of how to use the internet to modernize a large bureaucratic organization. In Germany, the government made some reports and legislation available on its web site, but did not set up on-line systems for filing forms, paying taxes or bidding for public contracts.<sup>71</sup> Although the Federal government promoted the use of video-conferencing and e-mail to facilitate the move from Bonn to Berlin, (*Informationsverbund Bonn-Berlin*), this and other efforts to encourage civil servants to use new information and communication technologies were hindered by limited number of PCs with internet access in most Federal offices.<sup>72</sup>

In the liberalized German telecom market, the federal industrial policy initiatives had little effect on the development of competition. Deutsche Telekom participated in both the school on line and the tele-work programs; however, the former monopolist received only limited commercial benefits from these initiatives. Unlike France Télécom, Deutsche Telekom neither enjoyed a privileged position as the government's sole partner nor received favorable regulatory treatment because of its participation in these public initiatives. In fact, the BMBF asked the new entrants to participate in the tele-arbeit program. At the time the new entrants were focusing on entering the voice market and were not prepared to participate in those trials, but once the new entrants established their position in the telecom market, the government hoped to include them in its internet policy initiatives.<sup>73</sup> Similarly, the German schools that participated in the Schulen ans Netz program had access not only to Telekom's T-Online, but also to its competitors, AOL and Compuserve. Furthermore, Telekom's major competitors

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<sup>71</sup> See for example [www.bundesregierung.de](http://www.bundesregierung.de)

<sup>72</sup> Interviews, Germany 1997.

participated in industrial policy initiatives at the regional level which accorded them similar commercial advantages.

### ***Regional Internet Policies***

In contrast to the Bund, several of the Länder governments adopted activist industrial policy initiatives to promote the use of the internet and new on-line services by local businesses and households. The regional governments of Bavaria and North Rhine Westphalia launched two of the most ambitious initiatives. First, the high-profile *Bayern Online* aimed to encourage the growth of the internet and innovative on-line services in Bavaria and make Bavaria an attractive destination for domestic and international investments.<sup>74</sup> The government allocated DM 100 million to this initiative while private participants committed an additional DM 200 million. *Bayern Online* included a diverse range of projects executed by the state government and Bavarian firms, including Telekom's competitor Viag and the equipment giant, Siemens. For example, the government set up a regional server and started to build a high capacity network (*Bayern Netz*) to connect schools and state administrations to the internet. The regional government also supported pilot projects in regional firms, including a tele-work program at BWM and a multimedia database to help boost the international competitiveness of the Bavarian textile and apparel industry.

The North Rhine Westphalia region's *Media NRW* project was more oriented toward interactive digital television, but also supported trials of on-line applications such

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<sup>73</sup> Interview, Germany 1997.

<sup>74</sup> Interviews. Bayerischen Staatskanzlei. 1995. *Bayern Online : Datenhochgeschwindigkeitsnetz und neue Kommunikationstechnologien für Bayern*. München: Bayerischen Staatskanzlei.; Bayerisches Staatsministerium für Wirtschaft, Verkehr und Technologie. 1996. *Technologie-Transfer-und Innovations-Förderung in Bayern*. München: StMWVT. See also [www.bayern.de](http://www.bayern.de).

as tele-banking and distance learning.<sup>75</sup> o.tel.o participated in two of the *MediaNRW* initiatives. First, the InfoCity project created a broadband local loop offering consumers various multimedia using the network of the new entrant otelo. Second, the *Multimedia Gelsenkirchen* project provided high speed internet access over the cable network. These regional internet policies helped to develop pockets of innovation and provided local firms with the opportunity to experiment with new technologies and test the demand for new services. However, these regional initiatives were launched by Länder which already had strong technology or media industries and did not benefit the poorer, less developed regions of the country.

### ***Regulating Multimedia***

Both the Council report and the action plan emphasized the need to establish a legal and regulatory framework to govern the internet and new on-line services. As mentioned above, in July 1996, the federal government and the states passed identical "multimedia laws."<sup>76</sup> According to its framers, this regulatory package was designed to promote innovation and to contribute to the broad acceptance of new multimedia service. The IuKDG amended existing laws on privacy, data security and the protection of minors to include multimedia services. The new legislation also clarified firms' responsibility for illicit content, stipulating that telecom network operators would not be held responsible for content transmitted on their network without their knowledge. The law defined a framework for the registration and monitoring of digital signatures by independent licensed certification authorities or "trust centers."

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<sup>75</sup> Interviews. For more detailed information see [www.media.nrw.de](http://www.media.nrw.de).

<sup>76</sup> Informations- und Kommunikationsdienste-Gesetz. June 13, 1997. (IuKDG) [www.iid.de](http://www.iid.de) Mediendienstestaatsvertrag der Länder (also discussed in the section on regulation)

The Federal and interstate multimedia laws responded directly to public concerns about decency and privacy. The German media and many political leaders expressed a great deal of alarm about pornographic and neo-nazi content which was illegal in Germany, but freely available on the internet. In 1995, the Bavarian state government brought a highly publicized law suit against the American internet service provider Compuserve for allowing its subscribers to access pornographic material. The court sentenced a senior Compuserve executive to two years in prison. This controversial decision was widely criticized by foreign and domestic business leaders who feared that it would slow investments in the internet and on-line services in Germany. Similarly, the federal government ordered German ISPs to block access to a Dutch service provider that maintained a web site for *radikal*, a magazine which was banned in Germany for its terrorist content. Another area of concern for German citizens and policy makers was the protection of privacy. Article 10 of the German constitution (*Grundgesetz*) guaranteed privacy rights and significantly limited the use of personal information; however, the ease of finding private information including credit histories and medical records on the internet raised serious questions about the ability of citizens to protect their privacy.<sup>77</sup>

The government hoped that by creating a clear regulatory framework for the internet and multimedia that they would lessen public fears about privacy and decency thereby stimulating demand. Policy makers also thought that by clarifying internet access providers legal liability for content, the multimedia law would encourage investment.<sup>78</sup> Despite its proponent's good intentions, the German multimedia law was widely considered to be harmful to the development of the market. One of the first laws

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<sup>77</sup> Frankfurt Allgemain article

in the world to regulate multimedia services, the IuKDG received harsh criticisms from large business users and information technology suppliers such as IBM.<sup>79</sup> These critics argued that in a rapidly changing technological environment, the German penchant for fixed, reliable rules discouraged investment and slowed the development of the internet and on-line services. The law's critics also stressed that regulation was not the not only option available for policy makers to address the public concerns about harmful content.<sup>80</sup> First, there were technical solutions, such as PICS, which could block access to certain sites. Moreover, industry leaders argued that Germany should adopt a policy of self-regulation similar to the United States. In a speech to the Global Information Networks conference in Bonn in 1997, Deutsche Telekom's Ron Sommer reaffirmed the need for data security, but argued that government regulation should be kept to a minimum. "The market and competition must determine the rules of the electronic marketplace. Only then will electronic commerce fulfill our expectations regarding growth and employment."<sup>81</sup>

The Multimedia Law was also criticized for being the first step down a dangerously slippery regulatory slope. The jurisdictional dispute between the Federal and Länder governments over the internet and new multimedia technologies could encourage greater regulation as national and regional political leaders struggle to assert

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<sup>78</sup> Interviews, Germany 1997. Informations- und Kommunikationsdienste-Gesetz. June 13, 1997. [www.iid.de](http://www.iid.de)

<sup>79</sup> Interviews, Germany 1997.

<sup>80</sup> The Ministry of Justice published a list of pornographic and hate sites that it suggests should be blocked by German ISPs. However, users can access these sites by using foreign servers as stepping stones. Moreover, the Ministry's list has come under fire because it can also be used as an easy reference for individuals seeking illegal content. Braun, Philipp, and Andreas Schaal. 1997. Federalism, the Nation State and the Global Network : The Case of German Communications Policy. Paper read at The Impact of the Internet on Communications Policy, at Harvard University.

<sup>81</sup> "Government Regulation vs. Industry Self Regulation" Statement by Dr. Ron Sommer, Chairman of the Board of Management, Deutsche Telekom AG. Bonn, 8 July 1997.

their authority over new technologies. For example, when the interstate multimedia agreement was passed in 1996, the Lander governments passed but delayed implementation of a very controversial tax on all personal computers with access to the internet. The Länder argued that a PC tax was an extension of their authority to levy an annual tax on televisions to fund public broadcasting stations. The proposed PC tax elicited enormous criticism from the business community and Federal policy makers.<sup>82</sup> Such a fee would represent a significant barrier to the introduction of new on-line services by raising the cost of accessing the internet for German households and businesses, particularly large corporations with computer networks which would have to pay for each terminal. Many predicted that this controversial proposal would reemerge in 2000 when the states renegotiated their broadcasting policy.

To summarize, German policy makers adopted controversial national and regional law to regulate on-line services, while pursuing only modest industrial policy measures to encourage the growth of the internet and the new on-line services. These policies had a mixed impact on market. On the one hand, the government's laissez-faire approach allowed the private sector to make technological choices and investments decisions based on market signals. Furthermore, the government's approach was competitively neutral and did not favor Deutsche Telekom's on-line business. On the other hand, the German government missed significant opportunities to promote the development of the internet in Germany. Internet and telecom experts from across the political spectrum agree that government can play an important and valuable role in the development of the internet by wiring schools and acting as a lead user of new technologies. While German internet policy statements acknowledged that such policies

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<sup>82</sup> Interview, Germany 1997



could help stimulate demand, the government failed to commit the resources necessary to have an impact on the market. Even more seriously, the government's decision to regulate the internet and new multimedia services was widely criticized for stifling the very market it was designed to promote.

### ***THE TELECOM OPERATORS***

A year after the German telecom market opened to competition, more than 200 new licenses were granted and 130 were under review. Powerful regional conglomerates, resellers and small city carriers all entered the market to compete with Deutsche Telekom. This pattern of market entry was in part the result of the German regulatory regime. First, the low interconnection rates which applied to both network operators and service providers using Telekom's network, encouraged the growth of aggressive resale start-ups, such as MobilCom. By offering significant discounts for long distance service, the resellers drove down retail prices and gained market share rapidly. In addition, the licensing regime allowed operators to obtain local, regional or national licenses and encouraged the proliferation of small, flexible city carriers and regional operators. These firms also competed by offering low prices and as in the case of NetKöln combined telephony with other municipal services such as electric power.

Several regional electric power companies and the industrial conglomerate Mannesmann, had however, decided to enter the German telecom market before the regulatory framework was established. These powerful firms had the financial and political resources to invest heavily in the lucrative telecom industry and participated actively in the liberalization process. Because political authority over the telecom industry was divided among several ministries, the Länder and the political parties, the

influential new entrants gained access to the policy making process through their regional political allies. During the German debates over telecom reform, the new entrants were instrumental in building political support for favor of full market liberalization and ensuring the passage of the pro-competitive TKG. Although some questioned the wisdom of allowing monopolies to compete in the liberalized telecom market, most senior policy makers supported these powerful firms' decision to enter the market because they had the political and financial resources to be tough competitors and win a significant share of the market.<sup>83</sup>

For Mannesmann, o.tel.o and Viag, telecommunications represented an attractive opportunity to diversify beyond their mature, core businesses into a dynamic, growing sector. The German telecom market was expected to grow from an estimated DM 70 billion in 1995 to over DM 100 billion in 2000.<sup>84</sup> To enter this lucrative market, all three cash rich companies invested heavily to build their own nationwide networks with the support of foreign technical partners. When the market first opened to competition, all focused on gaining market share in the growing long distance market by undercutting Telekom's prices and made only limited investments in value added services or internet technologies. This pattern of market entry encouraged price based competition as the overlapping networks created massive over-capacity. In addition, the new entrants focus on networks and basic voice telephony put them at a disadvantage in the growing market for internet access and on-line services.

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<sup>83</sup> Interview, Germany 1997.

<sup>84</sup> [www.dtag.de](http://www.dtag.de), [www.rwe-telliance.de](http://www.rwe-telliance.de), [www.vebacom.de](http://www.vebacom.de)

***Mannesmann***

When the market opened to competition on January 1, 1998, Mannesmann had emerged as the strongest of the network based competitors to Deutsche Telekom. In 1991 Mannesmann diversified beyond its core activities in engineering, automotive technology and steel tubing into the growing telecom sector with its successful bid for the license to operate the D2 cellular network. Mannesmann Mobilfunk proved to be a very strong competitor and by 1998 was the largest operator in the growing German mobile market with more than 7 million customers.

Building on D2's success, Mannesmann Arcor began to construct a fixed network to compete directly with Telekom for business and residential customers in the liberalized market. Arcor invested heavily in its own network and formed an alliance with the Deutsche Bahn to use the national railroad's fiber optic network. Initially Mannesmann concentrated on providing low priced voice service. To boost its call volume in the residential market, Mannesmann allowed customers to use its services on a call by call basis with a five digit dialing code. During 1998 the only advanced application that Mannesmann offered was Autocom which provided piloting systems to German drivers. It was not until the spring of 1999 that Mannesmann made its first major move onto the internet by partnering with the US portal Yahoo!.<sup>85</sup> Also in the spring of 1999, Mannesmann's new chairman Esser announced that the firm was exploring new media businesses including e-commerce and on-line news and entertainment services.<sup>86</sup> By the end of 1998, telecoms accounted for nearly a quarter of the groups total sales. While the D2 mobile service was the largest contributor to earnings, sales for Arcor's fixed network

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<sup>85</sup> "Mannesmann links up with Yahoo!" *Financial Times* 12 March 1999.

<sup>86</sup> Ralph Atkins, "Mannesmann expands new media strategy" *Financial Times* 15 April 1999.

services reached DM939 million in 1998. In addition to its strong start in the German market, Mannesmann expanded its telecom activities to other European markets through its strategic alliances with Olivetti in Italy and Cegetel in France.

### *o.tel.o*

The second largest new entrant was o.tel.o. The Dusseldorf based group was a joint venture between the telecom operations of two regional energy conglomerates, Veba and RWE, Germany's largest electricity distributor. Both Veba and RWE enjoyed profitable monopolies in their core electricity businesses and participated in a broad range of activities from chemicals to cable television to real estate. For both companies, telecommunications offered attractive opportunities for growth as the electric power market reached maturity and faced pressure to deregulate. The cash rich utilities had the financial resources to make large infrastructure investments and sustain substantial initial losses in their new telecom ventures.<sup>87</sup> From 1992-96 Vebacom invested nearly DM 5 billion in its telecom business.<sup>88</sup> During the same period, RWE Telliance allied with several smaller electric utilities to create a national fiber optic network.<sup>89</sup> In October 1997, the two combined their resources to prepare for the liberalization of the German market for voice telephony. The partners' core energy business provided them certain advantages and handicaps as they prepared to compete in the German telecom market. Although the firms' electric power activities gave them experience in network operation, the new entrant's narrow focus on infrastructure diverted their attention and resources away from lucrative value added services. Similarly, they possessed valuable customer data bases and access to customer premises within their region. Yet, both companies

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<sup>87</sup> Interviews. Germany and London 1997.

<sup>88</sup> [www.vebacom.de](http://www.vebacom.de)

were bureaucratic organizations which were not traditionally customer oriented and lacked experience in marketing.

To compete against Deutsche Telekom in all market segments, o.tel.o planned to invest DM 7 billion in its national network by 2005. Ulf Bohla, Chairman of the Managing Board of o.tel.o said, "We need our own network in order to remain independent of other carriers as far as possible. Only in this way can we provide our customers with quality, reliability and fair prices." In 1998 o.tel.o had 11,000 km of fiber optic cable which covered 26 cities. o.tel.o also owned the second largest cable network in Germany which connected 1.9 million of Germany's 25 million households and served 1.6 million of the country's 16 million cable subscribers. In addition, with its foreign partners Bell South and Vodafone, o.tel.o operated the national E-plus cellular network which had more than 800,000 customers in 1998. To gain market share, o.tel.o focused on providing competitively priced long distance voice services. The operator did not take advantage of its cable and mobile businesses to offer bundled services and made only limited investments in on-line services. Both Veba and RWE participated in the North Rhine Westphalia multimedia initiatives to offer high speed internet access and interactive TV, but they did not pursue these new services beyond the trial stage.

By 2005 o.tel.o hoped to gain a 12-17% share of the German telecom market and generate a turn over of DM 7-9 billion. However, during its first year competing in the liberalized market, the group encountered serious problems. o.tel.o experienced delays in launching its fixed line service and made a major strategic error by requiring customers to pre-register for its long distance service rather than providing immediate access on a call by call basis as Mannemann did. Moreover, the accelerating price war put severe

pressure of the operator's margins as it continues to invest heavily in new infrastructure. At the end of 1998 o.tel.o had 400,000 private customers, but registered losses of DM 2.3 billion.

### ***Viag Interkom***

The third network based new entrant was Viag Interkom, the telecom arm of the Bavarian energy based conglomerate, Viag Aktiengesellschaft. This powerful company had a regional monopoly over electric power distribution and was also partially owned by the Bavarian state government. Eager to diversify into the growing telecom industry, Viag allied with British Telecom and Telenor. Before the German market opened to full competition, Viag offered BT's customized Concert services to its corporate customers which included Bertelsmann, BASF, Hypo-Bank and Lufthansa.

When the German market opened to competition, Viag started to offer customers fixed line services, mobile communications and internet access. Viag's network subsidiary, Bayernwerk Netkom operated a high capacity fiber optic network in Munich and throughout Bavaria. Viag planned to invest DM 7.5 billion in its nation wide network by 2006 and generate sales of DM 10 billion.<sup>90</sup> Viag also operated Germany's fourth mobile operator, E2. Viag's entry strategy focused on integrating fixed and mobile technologies in order to reduce operating costs and offer innovative bundled services. For example, Viag offered an integrated service dubbed Genion which allowed customers to use their mobile phones at fixed network prices when at home thus by-passing the local loop. To remain competitive, Viag also lowered its prices considerably for both its fixed and mobile services. In 1998 Viag Interkom's sales doubled to reach DM 400 million

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<sup>90</sup> [www.viag.de](http://www.viag.de)

and the operator hoped to break even by 2001.<sup>91</sup> To boost its international presence, Viag also invested in the foreign mobile operators, Connect Austria and Orange Communications in Switzerland.

### ***MobilCom***

The most successful of the German resellers was Gerhard Schmid's entrepreneurial MobilCom. A star of the Germany's Neuer Markt stock exchange for small innovative companies, MobilCom quadrupled its revenues in 1998 to DM 1.47 billion and reported profits of DM 250.5 million, a nine-fold increase over 1997. When the German market opened to full competition on January 1, 1998, MobilCom took advantage of the regulator's liberal resale policy and low interconnection rates to offer very low prices relying primarily on lines leased from Deutsche Telekom. In contrast to the multi billion DM infrastructure investments of Mannesmann and o.tel.o, Mobilcom invested merely DM 40 million in switching equipment. MobilCom's entry strategy was based on a "simple, transparent, price-aggressive tariff structure" and marketing.<sup>92</sup> The company's success was remarkable. When in February 1998 MobilCom offered a flat rate of DM 0.19 per min, one third of Telekom's peak rate, it underestimated the popularity of the scheme and had to rush to increase capacity to carry the volume of calls it attracted. By the end of 1998 MobilCom had 147,000 pre-selected customers, 5 million regular fixed network and internet users and 1 million cellular customers. Recognizing that its success was based on an arbitrage opportunity that could disappear, MobileCom started to diversify by investing in a cellular provider, Cellway and an internet service provider. MobilCom began to offer low priced internet access and claimed to gain

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<sup>91</sup> "Changes expected at Viag Interkom" Financial Times 27 October 1998.

<sup>92</sup> [www.mobilcom.de](http://www.mobilcom.de)

400,000 customers in its first three months. MobilCom's entry into this market could help to reduce the relatively high price of internet access in Germany; however, the high local call charges would remain a barrier to the growth of the internet.

### ***Deutsche Telekom***

To prepare for competition, the incumbent Deutsche Telekom tried to restructure its organization and cut costs. In 1998 the former monopolist was burdened with significant debt and a workforce of 191,000 comprised primarily of civil servants. 40,000 jobs had already been cut and 20,000 more reductions were planned; however, management's ability to make further cuts was limited by the terms of the privatization deal. Despite Telekom's significant reorganization, some analysts questioned the effectiveness of the cost cutting measures.<sup>93</sup> In fact, doubts about the former monopolist's ability to control costs coupled with the tough regulatory regime damaged Telekom's performance on the stock market.<sup>94</sup>

When the German market opened to competition in 1998, Ron Sommer promised "a surprise every month," but perhaps the biggest surprise was the incumbent's considerable loss of market share and dramatic price cuts. In just one year, Telekom lost an estimated 30% of the long distance markets to its new competitors and announced aggressive long distance price cuts of as much as 70%. According to CEO Ron Sommer, these price cuts would cost Telekom DM 5-6 billion. Although Sommer hoped that the

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<sup>93</sup> Darbishire, Owen. 1995. *Switching Systems: Technological Change, Competition and Privatization. Industrielle Beziehungen 2.*; See also a draft case study on Deutsche Telekom prepared for the Sloan School of Management by Rebecca E. B. Weil and Christopher Delbruck, 1996.

<sup>94</sup> "The Lex Column" *Financial Times* 19 September 1997



price cuts would be offset by increased volume and cost savings, the incumbent's net sales increased by only 1.5% to DM 68.7 billion in 1998.<sup>95</sup>

Telekom's internet strategy was fragmented and met with mixed success. First, the former monopolist held a strong position in the market for internet access. Its T-Online internet service provider held 56% of the German market and launched operations in Austria and Switzerland. On the network side, Telekom invested heavily in its ISDN network and launched a pilot high speed data service using ADSL (Asymmetric Digital Subscriber Line) technology to carry video on demand and other multimedia services over the telephone network. Unlike France Télécom, Deutsche Telekom did not invest in e-commerce or content provision. In general, Telekom's approach to on-line services and applications lacked coherence and seemed to be quite defensive. For example, to understand the impact of internet telephony on its core business, the incumbent purchased an Israeli company that manufactured equipment for internet telephony. Telekom launched several international pilot projects known as T-Net Call, but did not offer internet telephony in the German market. Finally, Telekom entered into a strategic alliance with the German media giants Bertelsmann and Kirsch to provide digital pay TV; however, this venture was repeatedly blocked by the European Commission on the grounds that it was anti-competitive.

### ***CONCLUSIONS***

Although they were subject to the same external pressures and constraints, the German policy makers and firms' responses to liberalization and technological change differed considerably from those of their French counterparts both in substance and in

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<sup>95</sup> "Cheaper calls to hit Telekom" Financial Times 7 December 1998; "Still reeling from the effects of liberalization" Financial Times 18 March 1999.

their competitive implications. At the end of the long, negotiated German reform process, the regulatory regime, internet policies and pattern of market entry tended to encourage the development of competition; however, the strong political influences over telecom policy and dual multimedia law create a great deal of uncertainty and tended to discourage investment in new technology. Indeed, when the French and German markets opened to competition on January 1, 1998 the policy frameworks and the competitors that were in place created very different market structures and competitive dynamics. The final case study of the UK's fifteen years of experience with competition in the telecom market provides valuable insights on how regulation, industrial policy and patterns of market entry shape the development of competition over time.

## **CHAPTER 6**

### **THE BRITISH TELECOM MARKET**

With over fifteen years of competition in telecommunications, the UK is considered to be one of the most competitive telecom markets in the world. The UK telecom market differs from the German and French markets not only in the length of experience with liberalization, but also in the approach of the regulator and the new entrants. From the outset the independent regulator, Oftel, took an aggressive, pro-competitive position using asymmetric regulation<sup>1</sup> to constrain British Telecom and promote competition. Through licensing requirements, pricing decisions and initial restrictions on resale, Oftel tried to promote facilities based competition. In the market place Mercury initially targeted large business users and the markets in and between major cities making long distance prices fall dramatically. Faced with growing competition, British Telecom underwent a massive reorganization, cut prices, and invested heavily in new value added services and network modernization. In the early-1990s the American cable companies started to offer residential customers innovative packages which included telephone and cable services. While UK domestic and international long distance rates were among the lowest in the world, local prices remained relatively stable.

The British case offers valuable insights into the competitive implications of national regulatory policy, industrial policy and market entry over time. Political and business leaders in France, Germany and the European Commission all studied the British experience of market liberalization and regulation very carefully. The Director

Generals of the British telecom regulator, Sir Bryan Carsberg and his successor Don Cruickshank were both consulted frequently by reformers in Brussels, Paris and Bonn.<sup>2</sup> In addition, the United Kingdom served as a model of what a competitive market would look like and provided policy makers, managers and unions with indications of how competition would effect prices, investments, universal service and employment. While the governments in France and Germany chose not to follow Thatcher's policy of aggressive, pro-competitive reform, the British model had a significant impact on the national debates on telecom policy.

### ***LIBERALIZATION AND PRIVATIZATION*** ***Revolutionary change***

In the early 1980s, the United Kingdom became one of the first countries in the world to liberalize its national telecom industry and privatize its public telecom operator, British Telecom. Shortly after her election in 1979 Thatcher seized upon a growing domestic movement for telecom reform and quickly made telecom a test case for her market oriented approach toward industrial competitiveness. With an electoral mandate to reduce the size of the public sector and the support of the powerful financial service industry, Thatcher pursued a revolutionary policy of market liberalization and privatization over the opposition of the postal unions and domestic telecom equipment suppliers. By 1984 the Tory government had licensed Mercury Communications to compete with British Telecom in all market segments and privatized the national public operator, British Telecom. By 1998 when France and German were first introducing competition in basic voice service and infrastructure, the British telecom market was

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<sup>1</sup> Asymmetric regulation is designed to constrain the incumbent operator and help the new entrants gain market share in contrast to symmetric regulation which applies the same rules to all operators.

<sup>2</sup> Interviews in London, Brussels, Paris and Germany.

already one of the most competitive in the world providing consumers with low retail prices and innovative new services.

### ***The British Post Office***

Thatcher's groundbreaking reform of the British telecom industry built on a growing dissatisfaction among users over the poor performance of the national public operator, the British Post Office (BPO) and the failure of previous attempts at reform. The British Post Office held a monopoly over the provision of telecom services, network and equipment which according to some critics was among the most restrictive in the world.<sup>3</sup> In 1969 the UK government transformed the BPO from a government department into a public corporation in an effort to improve the national public operator's efficiency. Following this statutory change, the British Post Office maintained considerable autonomy from the rest of the state. The Post Office did not participate in the government's broader economic policy and was subject to limited political oversight. As a later report on the British telecom industry explained, "It is also perhaps fair to say that the Post Office has operated in the past with relatively little pressure to explain and justify its commercial conduct."<sup>4</sup> Although the BPO enjoyed much greater managerial autonomy than its French and German counterparts, its ability to invest in new technologies was severely restricted under the public sector borrowing requirement.<sup>5</sup> During the 1970s, the BPO's performance continued to deteriorate. The BPO trailed its European counterparts on most major indicators of performance, particularly productivity

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<sup>3</sup> Solomon, Jonathan H. 1986. Telecommunications Evolution in the UK. *Telecommunications Policy* (September).

<sup>4</sup> Beesley, Michael E. 1981. Liberalisation of the use of the British Telecommunications Network. London: Department of Industry.

<sup>5</sup> The Heath government cut the BPO's investments by 20% to try to keep the PSBR low to control inflation. Vogel, Steven K. 1996. *Freer Markets, More Rules*. Ithaca: Cornell University Press.

and capital investment.<sup>6</sup> Prices rose dramatically in the mid-1970s and delays for installations and repairs were long.<sup>7</sup> Business users led by the powerful financial services industry in the City of London complained bitterly about the BPO's high prices, poor service and lagging innovation during the 1970s. Confronted with growing foreign competition, the large British banks insisted that modern, efficient telecom services and infrastructure were vital to their international competitiveness.<sup>8</sup>

As frustrations mounted, the government established the Carter Commission to reexamine the existing monopoly regime. In 1977 the Commission published its report which confirmed that the BPO was "significantly less efficient than the best of its overseas competitors."<sup>9</sup> The Carter Report recommended that telecommunications be separated from the postal service to help improve the BPO's performance and introduce more transparency into the national operator's decision making. The report also advocated limited competition in the market for terminal equipment. Reluctant to attack the entrenched monopoly and provoke the postal unions, the Labour government never pursued these relatively modest proposals. Although it had no immediate policy impact, the Carter Report confirmed the need for reform and thereby set the stage for Thatcher's revolutionary attack on the traditional monopoly regime.

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	UK	F	G
Employees	246,000	164,000	203,000
Revenue per employee (US\$)	4,200	4,900	5,764
Employees per 1000 subscriber lines	127	84	88
Capital investment (US\$bn)	2.6	4.0	4.7
Capital investment per subscriber line (\$)	133	205	204

Source: Cawson, Alan, Kevin Morgan, Douglas Webber, Peter Holmes, and Anne Stevens. 1990. *Hostile Brothers : Competition and Closure in the European Electronics Industry*. Oxford: Clarendon Press.

<sup>7</sup> Interviews, London 1997. [www.oecd.org](http://www.oecd.org)

<sup>8</sup> Interviews, London 1997.

<sup>9</sup> Department of Trade and Industry. 1977. Report of the Post Office Review Committee. London: HMSO.

### ***Thatcher's radical reforms***

The wide spread perception that the traditional approach to the telecom market had failed allowed Thatcher to take a particularly aggressive approach to telecom reform.<sup>10</sup> Indeed, after the publication of the Carter Report, business users' demands for change grew louder as BT failed to keep up with technological advances and a series of postal strikes in 1978 severely disrupted the financial services industry in London. The Post Office Users' National Council reported that complaints about installation and repair delays doubled in 1978 and again in 1979.<sup>11</sup> With the backing of the financial service industry, Thatcher revived the Carter Commission's recommendations in September 1979 and soon went far beyond them. Sir Keith Joseph, the Secretary of State for Industry and a close advisor to the Prime Minister, told his team at the DTI to examine the possibilities for liberalizing telecom services and infrastructure. Under the leadership of Joseph and Thatcher herself, the government announced its intention to terminate the network monopoly and license a second carrier to compete with BT in 1980. That same year, the Chancellor of the Exchequer floated the idea of privatizing the national telecom operator.<sup>12</sup>

At the time these proposals represented a significant departure both from the traditional British telecom regime and from the long standing view that the telecom network and basic voice services were natural monopolies. Privatization also represented a major departure from the existing regime and the reforms recommended by the Carter

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<sup>10</sup> Vogel, Steven K. 1996. *Freer Markets, More Rules*. Ithaca: Cornell University Press. Cawson, Alan, Kevin Morgan, Douglas Webber, Peter Holmes, and Anne Stevens. 1990. *Hostile Brothers : Competition and Closure in the European Electronics Industry*. Oxford: Clarendon Press.

<sup>11</sup> Cawson, Alan, Kevin Morgan, Douglas Webber, Peter Holmes, and Anne Stevens. 1990. *Hostile Brothers : Competition and Closure in the European Electronics Industry*. Oxford: Clarendon Press.

<sup>12</sup> Hills, Jill. 1986. *Deregulating Telecoms: Competition and Control in the United States, Japan and Britain*. Westport, Connecticut: Quorum Books.

Committee. The conventional wisdom was also that BT was not a good candidate for privatization because it was too large and because it was likely to become an unchecked private monopolist.<sup>13</sup> Although the government's radical reforms received strong support from large business users, neither the financial service industry nor any major group lobbied for full market liberalization and privatization. In fact, the magnitude and the speed of the reforms far exceeded the demands of interest groups and the vision of most of the proponents of change within government.<sup>14</sup>

Thatcher's pioneering reforms of the national public telecom monopoly and the determination with which she pursued liberalization and privatization seemed to grow out of her strong ideological commitment to free market competition.<sup>15</sup> Thatcher and her supporters believed that competitive markets produced optimal outcomes and that government intervention should be kept to a minimum.<sup>16</sup> Building on these powerful liberal ideas, Thatcher's government pursued a market oriented approach to telecom reform that stressed consumer choice, management independence and private sector investments. Thatcher, Joseph and their supporters argued that competition in the national telecom market would benefit consumers by lowering prices, raising the quality of service and providing greater choice. The proponents of telecom liberalization also contended that an open and competitive domestic market would increase the international

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<sup>13</sup> Solomon, Jonathan H. 1986. Telecommunications Evolution in the UK. *Telecommunications Policy* (September).

<sup>14</sup> In interviews and a detailed study of the Parliamentary debates, Grande found that full liberalization and privatization were not envisaged by policy makers. His research found the decision to dismantle the BPO and its monopoly were made by a core group of key actors, notably Thatcher, Joseph and Howe. Grande, Edgar. 1989. *Vom Monopol zum Wettbewerb? Die neokonservative Reform der Telekommunikation in Großbritannien unter Bundesrepublik Deutschland*. Wiesbaden: Deutscher Universitäts Verlag. See also Vogel, Steven K. 1996. *Freer Markets, More Rules*. Ithaca: Cornell University Press.; Cawson, Alan, Kevin Morgan, Douglas Webber, Peter Holmes, and Anne Stevens. 1990. *Hostile Brothers : Competition and Closure in the European Electronics Industry*. Oxford: Clarendon Press..

<sup>15</sup> Interviews, London 1997 and 1998; Germany 1997.

<sup>16</sup> Conservative Party. 1979. *The Conservative Manifesto 1979*. London: Conservative Party.



competitiveness of the BPO by forcing the incumbent operator to improve its performance and reduce its bloated workforce.<sup>17</sup> During her first few years as Prime Minister, Thatcher became increasingly committed to privatization as a way of boosting industrial performance and allowing citizens to participate in the national economy as shareholders.<sup>18</sup> According to the Conservative leadership, privatization would also provide the BPO with strong incentives to increase efficiency and allow the national operator to raise money in private markets without the constraints of the PSBR.<sup>19</sup>

Several economic studies of market liberalization confirmed Thatcher and Joseph's ideas about the benefits of competition in the telecom industry.<sup>20</sup> One of the most influential reports was the Beesley Report which advocated the liberalization of value added services and the resale of leased lines.<sup>21</sup> The Beesley Report argued that the liberalization of value added services and resale would not only improve quality of service, but would also make the UK an attractive destination for inward FDI by multinational service companies. In addition, the experience of the US where MCI and others were challenging the monopoly of AT&T added considerable weight to the arguments that competition in basic voice services and infrastructure was both possible and desirable. The deregulation of the US market and the widespread dissatisfaction with the BPO combined to make telecom an excellent test case for Thatcher's market oriented approach to industrial modernization and infrastructure provision. The model of

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<sup>17</sup> Interview, London 1997.

<sup>18</sup> Thatcher, Margaret. 1993. *The Downing Street Years*. New York: HarperCollins.

<sup>19</sup> Hills, Jill. 1986. *Deregulating Telecoms: Competition and Control in the United States, Japan and Britain*. Westport, Connecticut: Quorum Books.

<sup>20</sup> In 1980 Joseph commissioned a consulting firm, MDA, to examine the feasibility of a competing private network. The report concluded both that network competition was both possible and desirable. Microelectronics Design Associates, *Independent Report to the Department of Industry*. London 1980.

liberalization and privatization developed in the telecom industry was subsequently applied to other sectors including energy and transportation in the UK and became a powerful model for policy makers around the world.<sup>22</sup> Perhaps the greatest appeal of the Thatcher's market oriented approach to industry was that it promised to improve the competitiveness of domestic firms and benefit consumers while at the same time boosting the state's revenues.

### *The Opposition*

Despite this promise, the government's plan to liberalize the telecom market and privatize the national public operator met with fierce opposition from the postal unions and the domestic equipment suppliers. Representing 90% of the BPO's workforce, the eight postal unions strongly opposed the government's proposals for reform. Led by the influential Post Office Engineering Union (POEU) and Union of the Post Office Workers (UPW), the unions argued that liberalization would lead to massive job losses. The unions garnered political support both from their traditional allies in the Labour party and from some Conservative backbenchers who were concerned about the impact of liberalization on universal service in rural areas. However, unlike the political leaders in France and Germany, Thatcher did not compromise with the union or make concessions to protect the national public operator's oversized workforce. In fact, according to several participants in the liberalization process, one of Thatcher's primary objectives was to break the power of the closed shop postal union.<sup>23</sup> By encouraging a non unionized

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<sup>21</sup> Beesley, Michael E. 1981. *Liberalisation of the use of the British Telecommunications Network*. London: Department of Industry.; Beesley Report recommended the liberalization of VANS and the resale of leased lines.

<sup>22</sup> See for example Vickers, John, and George Yarrow. 1988. *Privatization: An Economic Analysis*. Cambridge: MIT Press.; Ramamurti, Ravi, and Raymond Vernon, eds. 1991. *Privatization and Control of State-Owned Enterprises*. Washington, DC: The World Bank.

<sup>23</sup> Interviews, London 1997.

competitor which could provide telecom service in the event of a strike at BT, the government hoped to reduce the union's bargaining power and give BT's management the flexibility to undertake a much needed restructuring.<sup>24</sup> The public largely supported Thatcher's attack on the union. Frustrated by years of high prices and poor service, the public had little sympathy for the unions' demands for protection.<sup>25</sup>

Like the unions, the UK telecom equipment manufacturers also defended the existing monopoly regime and lobbied against the conservative government's reforms. By 1979 the British equipment industry's world market share plummeted from 25% a decade before to 6%. As they struggled to improve their performance, GEC, Plessey and the other British equipment manufacturers feared that liberalization and privatization would give their largest customer, the British Post Office, the freedom to turn to foreign suppliers. The equipment suppliers were particularly concerned that the BPO would enter the liberalized market for terminal equipment and force them to establish costly new distribution networks. The troubled equipment industry found little support in the Conservative government. First, the government was convinced that liberalization was the best way to increase the competitiveness of the equipment industry.<sup>26</sup> Second, by most accounts the government had chosen the interests of the financial services industry and other large business users over those of the steadily declining domestic equipment manufacturers.<sup>27</sup>

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<sup>24</sup> According to several senior officials in the government and at C&W, Thatcher did not prohibit Mercury from unionizing, but clearly preferred that it remain non-unionized.

<sup>25</sup> Cawson, Alan, Kevin Morgan, Douglas Webber, Peter Holmes, and Anne Stevens. 1990. *Hostile Brothers: Competition and Closure in the European Electronics Industry*. Oxford: Clarendon Press. Interviews, London 1997.

<sup>26</sup> Solomon, Jonathan H. 1986. Telecommunications Evolution in the UK. *Telecommunications Policy* (September).

<sup>27</sup> Vogel, Steven K. 1996. *Freer Markets, More Rules*. Ithaca: Cornell University Press.

The role of the BPO itself in the reform process appears to be somewhat ambiguous. The management of the BPO was largely excluded from the government's decision to open the telecom market and privatize the national telecom operator. In fact, the BPO's management learned of the government's decision to privatize its telecom operations during a public announcement in July 1982.<sup>28</sup> Since the 1969 Reform, the BPO enjoyed relative autonomy from the state and did not traditionally participate in the government's economic and industrial policy. When the Thatcher government decided to reform the Post Office, this arms length relationship combined with the government's strong commitment to competition seemed to make it very difficult for the incumbent operator to slow liberalization and win protection from the government. Although the incumbent operator was unable to defend its legal monopoly, BT's management did possess considerable technical expertise and a near monopoly on vital costing information. As a result, the former monopolist had a great deal of influence over the design of the regulatory framework and the terms of its own license.<sup>29</sup> Initially many of the BPO's managers opposed the government's radical program of reform; however, once Mercury received its license to compete in the domestic market, most of the incumbent's senior managers supported privatization in the hopes that it would provide them with greater freedom to diversify and expand BT's international activities.<sup>30</sup> In 1983 when the unions staged a strike to protest privatization, BT's management locked out striking workers and kept the lines open. This change in management's position in favor of

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<sup>28</sup> Cawson, Alan, Kevin Morgan, Douglas Webber, Peter Holmes, and Anne Stevens. 1990. *Hostile Brothers : Competition and Closure in the European Electronics Industry*. Oxford: Clarendon Press.

<sup>29</sup> Interviews, London 1997.

<sup>30</sup> Solomon, Jonathan H. 1986. Telecommunications Evolution in the UK. *Telecommunications Policy* (September).

privatization as a way of gaining greater autonomy repeated itself in France and Germany and proved to be decisive in shifting the domestic political balance.

### ***Rapid reform***

With a strong majority in Parliament and the direct support of Prime Minister Thatcher, the government was able to enact its telecom reforms relatively quickly. In 1981 the British parliament passed the Telecommunications Act which split telecom and postal services and gave the Department of Industry the power to license competitors to BT.<sup>31</sup> In February 1982, Mercury Communications received a license to build and operate an independent network to compete with BT. In October 1982 the Secretary of State for Industry used his power under the 1981 Telecom Act to issue a general license for a wide range of value added network services excluding simple resale. In November 1983 the Minister for Information Technology Kenneth Baker announced the duopoly policy limiting the number of fixed line operators to two for seven years.

Shortly after the general election, Parliament approved the Telecommunications Act of 1984 which created Oftel to regulate the competitive market and allowed the government to privatize British Telecom. The government then sold 50.2% of British Telecom for £3.9 billion. Later that year the government issued new licenses for Mercury and British Telecom which removed the incumbent operator's exclusive rights and established many of the key terms of market regulation. As discussed in greater detail below, Thatcher's government not only opened the telecom market to competition,

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<sup>31</sup> For a complete timeline see [www.oftel.gov.uk](http://www.oftel.gov.uk). For a detailed history of the liberalization process see Hills, Jill. 1986. *Deregulating Telecoms: Competition and Control in the United States, Japan and Britain*. Westport, Connecticut: Quorum Books. and Vogel, Steven K. 1996. *Freer Markets, More Rules*. Ithaca: Cornell University Press..

but also created a regulatory regime that tilted the playing field in favor of the new entrants to facilitate the development of a truly competitive market.

***REGULATING COMPETITION IN THE LIBERALIZED MARKET***  
***Competition and Consumer Value***

When Thatcher's government made the pioneering decision to introduce competition into the national telecom market, the regulator had few models to follow. Even in the United States, the divestiture of AT&T created competition in long distance, but the RBOCs maintained their local monopolies. During the duopoly regime of the 1980s, the new British regulatory agency, Oftel, struggled with many important issues including interconnection. According to several industry experts it was not until after the 1991 duopoly review that Oftel really established a stable, pro-competitive regulatory regime.<sup>32</sup> The 1991 duopoly review culminated with the publication of the white paper *Competition and Choice: Telecommunication Policy for the 1990's*<sup>33</sup> which ended BT and Mercury's legal duopoly and opened the market to a wide range of foreign and domestic competitors. To encourage entry in the local loop, the government allowed cable television providers to offer voice services over their cable networks and mobile operators to apply for fixed service licenses. At the same time, Oftel made several modifications to the regulatory regime designed to facilitate the development of competition in all services and infrastructure.<sup>34</sup> Another major shift in the British

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<sup>32</sup> Interviews, London 1997 and 1998.

<sup>33</sup> Department of Trade and Industry. 1991. *Competition and Choice: Telecommunications Policy for the 1990s*. London: Deptment of Trade and Industry.

<sup>34</sup> The government allowed international simple resale to countries with equivalent market liberalization ordered several license modifications to allow number portability, facilitate entry by the cable companies, adjust BT's price cap, reduce international long distance prices and as discussed below set up the access deficit contribution.

telecom regulations began in the late-1990s when Oftel lifted price regulation from market segments in which competition was firmly established.<sup>35</sup>

As the telecom regulatory regime evolved, certain core principles remained strong. British regulatory policy reflected a deep commitment to promote vigorous facilities based competition and to provide consumers with low cost, high quality service. The same powerful belief that competition produced optimal outcomes that motivated Thatcher to liberalize the national telecom market also influenced the British approach to regulation. For Thatcher and her economic advisors, liberalization consisted not just of permitting competition, but included creating the conditions that would best allow competition to grow.<sup>36</sup> To this end, the government argued that regulation should be used to encourage facilities based competition and to provide consumers with low cost, high quality service. The first Director General of Oftel, Sir Bryan Carsberg shared the Thatcher government's views and made promoting competition and maximizing value for consumers his highest priorities.<sup>37</sup> After the monopoly review in 1992, the Director General continued to focus on the same goals: "My key objective is to improve telecommunications services for all types of users in the UK. I believe the best way to achieve this is through competition and that competition is a better way than price control of finding out how efficiently, and therefore, how inexpensively, telephone services can be provided. And, once competition is well established, regulation should decrease."<sup>38</sup>

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<sup>35</sup> Geoffrey Myers "Interconnection and Unbundling : Long Run Incremental Costs and the Regulation of Interconnection Charges in the UK" presentation at the AIGC Conference Telecommunications Reform in Germany Bonn 20 November 1997. See also [www.oftel.gov.uk](http://www.oftel.gov.uk)

<sup>36</sup> Vogel, Steven K. 1996. *Freer Markets, More Rules*. Ithaca: Cornell University Press.; Interviews, London 1997.

<sup>37</sup> Carsberg, Bryan. 1989. Injecting competition into telecommunications. In *Privatization and Competition*, edited by Veljanovski. London: Institute of Economic Affairs.; Interview, London 1997.

<sup>38</sup> Oftel. 1992. *The Regulation of BT's Prices : A Consultative Document* issued by the Director General of Telecommunications. London: Office of Telecommunications.

Moreover, the commitment to competition and consumer value remained strong under Tony Blair's New Labour government. The Labour Party Manifesto stated, "In the utility industries we will promote competition whenever possible. Where competition is not an effective discipline, we will pursue tough, efficient regulation in the interests of customers... We recognise the need for open and predictable regulation which is both fair to the consumer and to shareholders and at the same time provides incentives for managers to innovate and improve efficiency."<sup>39</sup>

With this strong commitment to competition, Oftel actively promoted the development of facilities based competition in the British telecom market. The independent regulatory authority, Oftel, took an aggressive, pro-competitive position actively using asymmetrical regulation to constrain British Telecom. For example, line of business restrictions prevented BT from providing CATV service or from using fixed radio technology in the local loop. The regulator also set low interconnection rates and maintained BT's unbalanced tariff structure in order to help Mercury gain market share and establish a stable revenue base from which to grow.<sup>40</sup> Through licensing requirements and its approach to access and resale, Oftel tried to promote investment in competing infrastructures. For example, Mercury was obliged in their license to build a network with requirements to achieve a certain coverage within a set period of time which the operator met and surpassed. Although BT's license provided for unbundling and equal access, Oftel did not promote either in order to encourage local infrastructure

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<sup>39</sup> 1997 Labour party manifesto (copy – find formal reference)

<sup>40</sup> For more information see Rickford, Jonathan B. K. 1998. Change, politics and determinist economics in Europe. *Telecommunications Policy* 22 (6):471-482.



competition. The regulator believed that facilities based competition was the best way to break the market power of the incumbent and allow competition to take root.<sup>41</sup>

Three components of the British regulatory regime were critical for achieving strong facilities based competition and delivering value to consumers : an independent regulator, a clear, pro-competitive interconnection regime and a market oriented approach to universal service.

### ***The Independence of the Regulator***

The Telecom Act of 1984 established an independent regulator, the Office of Telecommunications (OfTel). OfTel was modeled on the Office of Fair Trading (OFT) and its structure was later replicated in several other sectors.<sup>42</sup> To help insulate the regulator from political intervention, the Director General of OfTel was appointed to a five year term and could not be removed by the government. The Department of Trade and Industry (DTI) chose Bryan Carsberg, a professor from the London School of Economics to be the first Director General. The Telecom Act established a clear division of labor between the DTI and the new regulator. In addition to appointing OfTel's Director General, the DTI issued licenses to provide telecom services and infrastructure. When the market first opened to competition, many key regulatory issues, including BT's obligations for interconnection and universal service were included in the operators' licenses. It was however, OfTel that had the authority to interpret, enforce and amend these licenses as competition developed in the marketplace.<sup>43</sup> According to the 1984

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<sup>41</sup> develop, Interviews and OfTel statements including OfTel. 1994. A Framework for Effective Competition. London: Office of Telecommunications. See also Hausmann.

<sup>42</sup> The UK government subsequently created Ofgas, Ofwat, Offer (electricity) and ORR (railroads).

<sup>43</sup> A popular anecdote clearly illustrates the extent of OfTel's power and the limited legal authority of the DTI. As the story goes OfTel was rebalancing tariffs and BT to raise its local rates causing quite a political storm. Minister of Industry, Sir Leon Brittan, summoned the Director General of OfTel, Sir Bryan Carsberg and asked him what OfTel was going to do about this rate increase. Carberg replied that that BT was in

Telecom Act, Oftel was fully responsible for enforcing terms of the operators' licenses; ensuring the provision of universal service; protecting the interests of consumers and promoting "fair, effective and sustainable competition." With this expansive mandate and no direct political oversight, the Director General wielded considerable power over the development of the market.<sup>44</sup>

Although Oftel was independent by statute, the regulator had to defend its independence from both the government and the former monopolist, British Telecom. Both Carsberg and his successor Cruikshank stated that throughout their respective tenures as Director General of Oftel they had to actively assert their independence by making and standing by politically difficult decisions on pricing, procurement and access.<sup>45</sup> For example, in 1984 shortly after the market opened to competition, BT announced that it would no longer purchase equipment exclusively from its traditional UK suppliers. Concerned about the impact of BT's decision on the ailing UK equipment manufacturers, a parliamentary delegation which included many Tory backbenchers pressured Oftel to intervene and stop BT from going to a foreign supplier. The Director General remained firm in his commitment to competition and allowed BT to introduce a new supplier, but suggested that they do so gradually.<sup>46</sup> In other cases, BT challenged the regulator's decisions and tried to win protection. For example, BT vehemently protested

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compliance with its license but that he would look at the increase carefully and review the price regulations. The Minister then replied, "And, if you find a problem you will come to me and I can change the regulation." The Minister's assistant corrected him, "No Minister to change a regulation a committee must review the regulation." "So, I will call the committee..." "No Minister, only the Director General can call the committee." Turning back to Carsberg the Minister said, "You will call the committee and it will report to me and I will change the regulation." No Minister repeated his assistant, "The committee will report to the Director General and only he can then change the regulation." The Minister looked at Carsberg and said, "You have a lot of power Director General." Interviews, London 1997.

<sup>44</sup> In interviews in the UK and in continental Europe, several industry experts noted that Oftel had more power and more autonomy than its European counterparts and more than most constitutions would accommodate.

<sup>45</sup> Interviews, London 1997.

when Oftel set a low price cap for leased lines. Maintaining his position that the prices reflected costs and would encourage competition, the regulator refused to compromise and threatened to refer the case to the MMC. To avoid this costly and unpredictable proceeding, BT finally conceded.<sup>47</sup> The regulator had to stand up to the former monopolist in order to maintain his pro-competitive approach to pricing and access. Such independence did, however, require a great deal of vigilance because Oftel depended on the incumbent for information on costs in order to make its pricing decisions.<sup>48</sup>

According to the regulator, the Prime Minister's commitment to an independent regulator and free market competition was crucial to his ability to maintain his pro-competitive stance in the face of opposition from BT or Parliament. When Thatcher was in power, the regulator was confident that she would support him if a dispute arose with another member of the government.<sup>49</sup> Thatcher's successor, John Major did in fact stand by the regulator when a senior cabinet minister challenged a politically unpopular pricing decision.

The privatization of British Telecom in three tranches did, however, put enormous pressure on the regulator to moderate his decisions so as not to reduce the value of the government's shares. Two crucial regulatory reviews, the 1988 price cap review and the 1991 duopoly review coincided with the second and third offerings of the government's shares in British Telecom. There are conflicting views as to how well the regulator stood up to the pressure from BT and the Treasury in these two cases. According to several

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<sup>46</sup> Interviews, London 1997 and 1998.

<sup>47</sup> Thatcher, Mark. 1994. Regulatory Reform in Britain and France : organizational structure and the extension of competition. *Journal of European Public Policy* 1 (31):441-464.

<sup>48</sup> Vincent Wright lecture in the MIT-Harvard course Trade and Domestic Politics, Fall 1994. (article?). Interestingly, one of the advantages of infrastructure competition was that by the mid-90s, Oftel could obtain cost information from BT's competitors which helped the regulator make its cost determinations.

<sup>49</sup> Interview, London 1997

accounts, BT exploited its political leverage brilliantly during the duopoly review and persuaded the regulator to accept the controversial access deficit.<sup>50</sup> Whether or not Carsberg gave in to direct demands from the Treasury to favor BT, the regulator knew that the cabinet had to approve the duopoly review and that his decision on the access deficit would affect the white paper's passage.<sup>51</sup> Even a determined regulator with a strong commitment to competition and considerable legal independence was under tremendous pressure to favor the state-owned incumbent prior in order to maximize the value of its share offerings.

### ***Interconnection***

The terms and price of interconnection were a persistent source of conflict from the time when the British market first opened to competition. For Mercury, interconnection to BT's network was essential to complete the majority of its customers' call and represented the new entrant's largest cost. In 1984, the government adopted a system of price caps to regulate retail prices, but failed to establish a coherent wholesale pricing policy and interconnection regime.<sup>52</sup> BT's license required the operator to interconnect with all other licensed PTO's and prohibited any "undue preference and discrimination" In accordance with their licenses, BT and Mercury entered into negotiations on the terms and charges of interconnection in 1982. In 1984 the operators reached a non-binding agreement known as the Heads of Agreement. When this

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<sup>50</sup> See for example, Hills, Jill. 1986. *Deregulating Telecoms: Competition and Control in the United States, Japan and Britain*. Westport, Connecticut: Quorum Books. Interviews, London 1997 and 1998.

<sup>51</sup> For a good analysis of the subtle but powerful pressures that privatization created see Vogel, Steven K. 1996. *Freer Markets, More Rules*. Ithaca: Cornell University Press.

<sup>52</sup> Littlechild argued that price caps encouraged greater efficiency than rate of return regulation because the operator could keep any profits derived from increases in productivity greater than those anticipated by the price cap. The government accepted his recommendations in 2/83. The price cap was initially set at RPI-3%. In 1988 it was set at RPI-4.5%. In 1992 7.5% Littlechild, Stephen C. 1983. *Regulation of British Telecommunications' Profitability*. London: Department of Industry.

arrangement fell apart, Mercury asked Oftel to mediate. Mercury charged that British Telecom was implementing interconnection too slowly. Although BT attributed the delays to technical problems, Mercury accused the former monopolist of deliberate anti-competitive behavior.

The other major dispute centered on interconnection prices and the extent to which the charges should take into account BT's unbalanced tariff structure. Mercury argued that interconnection was their largest cost and that without low interconnection charges they could not establish a viable business. BT countered that low interconnection rates constituted a direct subsidy to Mercury because they made no allowance for BT's unbalanced tariffs and the economic cost of its obligation to provide geographically averaged tariffs.<sup>53</sup> BT's license stipulated that interconnection prices should be linked to costs; however, in practice the regulator had considerable discretion when making his pricing decisions. Oftel's 1985 Determination on the terms of interconnection between BT and Mercury's networks established a time table to accelerate interconnection and set relatively low interconnection rates. To encourage the development of competition, Oftel also maintained BT's unbalanced tariff structure which helped Mercury to gain market share in high traffic long distance routes.

When the duopoly review was launched in 1990, BT once again asked for compensation for the so-called access deficit. BT claimed that they were losing £2 billion on line rental access, that they were breaking even on local calls and that they made a return of 15% on national long distance and 105% on international long distance.

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<sup>53</sup> Rickford, Jonathan B. K. 1998. Change, politics and determinist economics in Europe. *Telecommunications Policy* 22 (6):471-482. Like most PTO's BT had historically subsidized below cost monthly access charges and local call prices with high long distance prices. When the market opened to competition, the regulator did not allow BT to fully rebalance its tariffs. If interconnection rates were low

The government's White Paper, *Competition and Choice: Telecommunications Policy for the 1990s* concluded that BT was entitled to compensation for its access deficit.<sup>54</sup>

Mercury vehemently protested this decision insisting that they would go out of business if they had to pay an access deficit contribution (ADC). A few months later, in July 1991 the government changed its stance on the ADC and gave the Director General of Oftel the discretion to issue waivers for the ADC. The dispute between Mercury and BT raged on and in 1993 Mercury went to court to try to change the interconnection pricing system from per minute rates to capacity based charging. In December 1993, the regulator published another BT-Mercury interconnection determination and waived the ADC for firms with less than 10% of the market for either international or domestic calls. At the time Mercury had 19% of the international long distance market and 7% of the domestic market, so it had to pay BT £70 million in 1993 for its international traffic.<sup>55</sup>

In early 1994 the regulator agreed to rethink the policy toward interconnection. By the end of the year, Oftel published a broad consultative document *A Framework for Effective Competition* on how to adapt the regulatory regime to the increasingly competitive market. Both this document and the ensuing debates focused heavily on the key issues of interconnection, universal service and fair trading. Cruickshank wanted to push the retail and wholesale price structures to be more cost based in order to promote competition and create a secure environment for investment.<sup>56</sup> To align interconnection with costs, the regulator first ordered BT to decrease their rates without worrying too much about the economic theory. Most of the 30% rate reductions were achieved in this

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Mercury could therefore undercut BT's long distance prices, while BT lost money in the local loop (the access deficit).

<sup>54</sup> Department of Trade and Industry. 1991. *Competition and Choice: Telecommunications Policy for the 1990s*. London: Department of Trade and Industry.

first stage. Then in the second stage Oftel tried to move the sector toward an economic model of efficiency. In 1997 Oftel changed the cost base for interconnection charges from fully allocated historic costs to long run incremental costs plus a mark-up for common costs.<sup>57</sup> Using these cost calculations, the regulator set the base level for charge caps and cost oriented ranges for individual service charges. For competitive services, BT was free to set charges, whereas for non-competitive services, the regulator established charge caps of RPI-8% per year. Under this new interconnection regime, the UK interconnection rates were by far the lowest in the EU and among the lowest in the world.

**1998 Interconnection Rates (ECU/100 per minute)**

	<b>Local</b>	<b>Single Transit</b>	<b>Double Transit</b>
<b>UK</b>	0.61	0.87	1.69
<b>EU range</b>	0.6-1.0	0.9-1.8	1.5-2.6

Source: EU Commission Interconnection Tariffs in Member States 1st December 1998  
europa.eu.int;

As for the access deficit dispute, the regulator eliminated the ADC in 1996. The next year, the regulator lifted certain pricing restrictions and gave BT the freedom to adjust their prices in competitive market segments. BT did not raise their rates which led many industry observers to conclude that there was in fact no access deficit.<sup>58</sup>

While the low charges encouraged competition using BT's network, two aspects of the UK interconnection regime were specifically designed to promote facilities based competition. When the market first opened to competition, the government restricted

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<sup>55</sup> "Watchdog increases pressure on BT profits" Financial Times 3 December 1993.

<sup>56</sup> Interview, London 1998.

<sup>57</sup> The incremental cost methodology was comprised on three elements : a top down model, a bottom up model and a detailed reconciliation. For a summary of the models see Geoffrey Myers "Interconnection and Unbundling : Long Run Incremental Costs and the Regulation of Interconnection Charges in the UK" presentation at the AIGC Conference Telecommunications Reform in Germany Bonn 20 November 1997.

simple resale to allow BT to rebalance its private circuit prices. In November 1989 the regulator amended the Branch System General License to allow the simple resale of capacity leased from a public telecom operator. So as not to discourage infrastructure investment, the rates for leased line remained higher than the low interconnection rates available to network operators. Similarly, Oftel did not require BT to offer unbundled access to its local loop, again with the explicit aim of promoting facilities based competition.<sup>59</sup>

### ***Universal Service***

Under the terms of its license, British Telecom was responsible for providing universal service and geographically averaged prices throughout the UK.<sup>60</sup> The basic elements of universal service did not change significantly as the market developed. In 1997 universal service consisted of a connection to the fixed network capable of supporting voice telephony and low speed data and fax transmission; the option of a more restricted service package at a lower cost; access to public call boxes at affordable prices; free access to emergency numbers and operator assistance, itemized billing and selective call barring; options of outgoing call barred service with a repayment plan as an alternative to disconnection for non-payment.<sup>61</sup>

The funding of universal service was a source of on-going conflict. BT argued that they were entitled to compensation for providing universal service which included costly service to rural areas. Mercury argued against compensating BT for providing

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<sup>58</sup> Interviews, London 1998.

<sup>59</sup> Interviews, London 1998. The UK approach to unbundled access was also discussed by Geoffrey Myers of Oftel at the AIGC Conference Telecommunications Reform in Germany Bonn 20 November 1997.

<sup>60</sup> Department of Trade and Industry. 1995. Licence granted by the Secretary of State for Trade and Industry to British Telecom under Section 7 of the Telecommunications Act 1984. London: Department of Trade and Industry.; Kingston Telecoms (formerly a part of the Kingston upon Hull City Council) was the PTO in the Hull area and was responsible for universal service provision within its licensed area.



universal service on the grounds that there was no net cost associated with the former monopolist's universal service "opportunity." Several economic studies confirmed Mercury's assertion that by providing universal service BT not only received revenues for calls but also obtained the opportunity to sell value added services.<sup>62</sup>

Sympathetic to Mercury's claim, the regulator put the burden of proof on BT to demonstrate that there was a cost incurred by providing universal service. In its 1997 statement Oftel concluded that BT faced no undue burden from its obligations as universal service provider and was not entitled to compensation.<sup>63</sup> BT contested Oftel's cost and revenue estimates, but eventually acquiesced. As the regulator pointed out, even if BT did prove that universal service provision constituted a measurable financial burden, there was no guarantee that they would receive compensation. Because there were competing networks in the UK, the regulator could open a tender and award compensation to one of BT's competitors which offered to provide universal service at a lower cost.

### ***Market Results***

When the British market was first liberalized in the early 1980s, competition developed more slowly than many observers had anticipated. By the duopoly review in 1991, BT still held over 90% of the market. The regulator's policy of asymmetric regulation did allow Mercury to gain market share by cream skimming large business accounts and high traffic long distance routes. What the duopoly failed to achieve was local loop competition. For the consumer, Mercury's low rates and BT's aggressive price

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<sup>61</sup> [www.oftel.gov.uk](http://www.oftel.gov.uk)

<sup>62</sup> The telecom consultancy Analysys conducted in-depth studies of the cost of universal services in the UK and other European countries that found the cost to zero. [www.analysys.com](http://www.analysys.com)

cuts meant that the cost of long distance calls fell considerably, whereas monthly access charges and local call rates remained stagnant.

After the duopoly ended in 1991 and Oftel established a clearer interconnection policy, competition really took off in the British market. By 1998, BT's market share had fallen just below 70% of the total market, which broke down to be 89% in local access, 76% in national long distance and 49% in international long distance. By 1997 retail prices had fallen by an average of 47% in real terms. In the local loop, the cable companies offered consumers attractive call rates and innovative service packages; however, line rentals did increase in real terms by 8.7% for domestic users and 7.7% for business users. This increase was in part due to tariff rebalancing, but also highlighted the difficulty in promoting local competition.

Under the UK regulatory regime, the telecom operators did make considerable investments in infrastructure. By 1997 there were three or more overlapping local loops in all major UK markets, four cellular networks and two radio access providers. Although investments fell during the recession of the early 1990s, they increased steadily after 1993 reaching more than £5 billion in 1997. In addition to investments by Mercury and the other new entrants, BT responded to competition by upgrading its own network and investing heavily in new services.

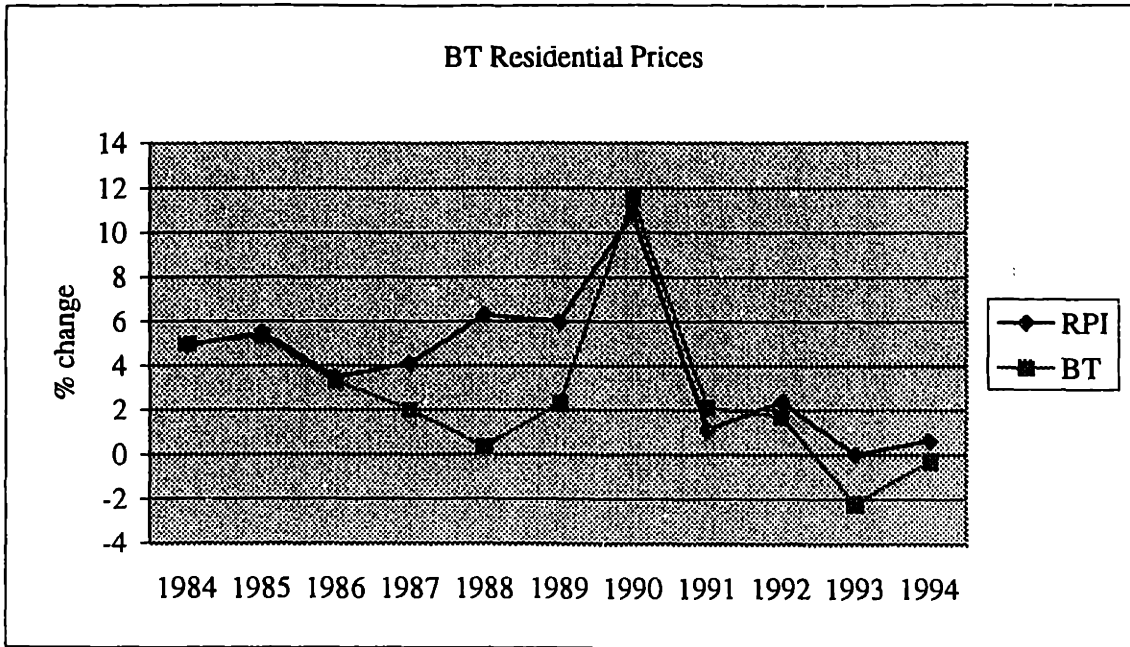
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<sup>63</sup> Oftel July 1997 "Universal Telecommunications Services"; consultative document 2/97 "Universal Telecommunication Services -- Proposed Arrangements for Universal Service in the UK from 1997

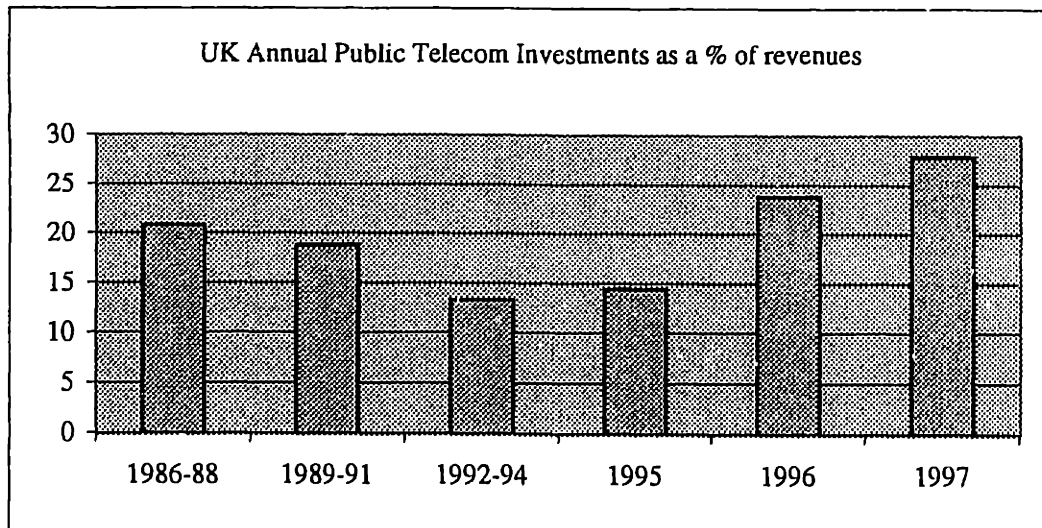
**BT's price changes August 1984 to February 1997***% change in real terms*

<b>Exchange Line rentals</b>	
Domestic	8.7
Business	7.7
<b>Local Calls</b>	
peak	-45.7
standard	-33.8
cheap	-25.7
weekend cheap	-41.7
<b>National 'b' calls</b>	
peak	-80.8
standard	-74.8
cheap	-60.5
weekend cheap	-71.5
<b>International calls</b>	-44.7
<b>Overall weighted average</b>	-47.0

Source: Oftel



Source: OECD



Source: OECD

## ***Lessons***

Several important lessons emerged from the British experience regulating competition in the national telecom market. First, the British case highlights the considerable and enduring importance of regulation in the marketplace. According to senior executives at Mercury and Cable & Wireless, Mercury survived by virtue of regulation during the duopoly.<sup>64</sup> By 1998, the regulator was able to lift price restriction in certain competitive market segments; however, the Oftel continued its fight to promote competition in the local loop. Both Director Generals stated that at no time did they feel that competition had developed sufficiently so that market forces alone could ensure fair prices in all market segments.<sup>65</sup>

The British case also reveals the need for clear and consistent regulatory policy. Both Mercury and BT attested to the high cost of the prolonged dispute over interconnection.<sup>66</sup> It was not until the regulator established a clear interconnection regime in 1993 that competition intensified and BT's market share fell below 90%. Perhaps one the most important lessons is that a promoting competition in the telecom industry is very difficult and may require that the regulator take an active approach to encouraging competition rather than just creating a level playing field.

### ***PROMOTING THE INTERNET A market-oriented approach***

Unlike the other European Union member states, the full liberalization of the British telecom market did not coincide with the explosion of the internet and new online services. From the mid 1980s to the mid 1990s, the government pursued few traditional

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<sup>64</sup> Interviews, London 1997 and 1998.

<sup>65</sup> Interview, London 1997 and 1998.

industrial policy measures to promote technological innovation in the telecommunications industry. The Thatcher government's hands off approach to technological development seemed to rest in large part on the Prime Minister's belief that free markets would encourage innovation and investment. For example, a 1988 DTI report entitled *The Infrastructure for Tomorrow* concluded that the role of the government in promoting new information and communication technologies should be limited to ensuring that the national regulatory policy allowed competition to develop as quickly as possible. The report argued repeatedly that technological choices and investment decisions should be left to the market.<sup>67</sup>

By the mid-1990s, policy makers and interest groups in the United States and continental Europe were engaged in broad debates on the impact of the "information society" and the appropriate policy response to the technological convergence of telecoms, computing and broadcasting. In contrast, such discussion remained quite limited in the UK. Both policy reports and the press focused primarily on the economic implications of the new information and communication technologies, but paid little attention to the social and cultural impact of the internet and applications such as distance learning and tele-working.<sup>68</sup> In November 1994 John Major's conservative government published its first major statement on the internet and multimedia technologies, *Creating*

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<sup>66</sup> Rickford, Jonathan B. K. 1998. Change, politics and determinist economics in Europe. *Telecommunications Policy* 22 (6):471-482. Interviews, London 1997.

<sup>67</sup> Department of Trade and Industry. 1988. Communications Steering Group Report : The Infrastructure for Tomorrow. London: Department of Trade and Industry.

<sup>68</sup> Interviews and author press review. This point is also made in Graham, Andrew. 1996. Public Policy and the Information Superhighway : The Case of the UK. Paper read at National Initiatives for Information Infrastructure, at Harvard University.; The European Union ESIS database on European Information Society Promotional Activities also noted that in the United Kingdom the term "information society" was rarely used and that "There is still some preoccupation with the technology itself rather than broadening consideration to cover such societal aspects of information such as content, access and inclusion" (1/1/99 version) [www.ispo.cec.be](http://www.ispo.cec.be)

*the Superhighways of the Future: Developing Broadband Communications in the UK.*

Like the Thatcher government, Major's government stressed that a competitive telecom market provided the best environment for innovation and investment in new technologies. In February 1996, Major launched the *Information Society Initiative* which aimed to promote public awareness about new information and communication technologies and encourage investment.<sup>69</sup> With a budget of only £35 million, this initiative produced few concrete actions and appeared to have little impact on the telecom operators' investments in new technologies.

When the center-left New Labour government came to power, Prime Minister Tony Blair made promoting the diffusion of the internet and other new information and communication technologies a top priority. Blair himself initiated a high-profile awareness campaign to promote internet use and encourage private sector investment in new information and communication technologies.<sup>70</sup> At the Labour Party conference in the fall of 1997, the newly elected Prime Minister announced two major internet policy initiatives focusing on education and administrative reform. What distinguished Blair's internet policy from that of other European governments was that the British initiatives were market oriented and not only advocated but achieved significant private sector participation. Blair's approach reflected the party leadership's commitment to equality of opportunity by giving particular attention to education and training, yet like his conservative predecessors the Prime Minister focused primarily on promoting private sector investment and innovation.<sup>71 72</sup>

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<sup>69</sup> [www.isi.gov.uk](http://www.isi.gov.uk)

<sup>70</sup> Blair was the first world leader to give an on-line interview. 29 April 1998.

<sup>71</sup> Interviews, London 1997 and 1998.

The initiatives to promote the use of the internet in schools serves as an excellent example of New Labour's market oriented internet policy. At the 1997 Labour Party Conference Blair announced an ambitious policy to modernize the computer equipment in British schools and create a National Grid for Learning using internet technology. The goal of these initiatives was both to raise educational standards and to encourage the private sector to develop innovative applications and content. When in opposition, Blair commissioned a study on the use of information and communication technologies in British schools. The so-called Stevenson Report found that although a high percentage of UK schools had computers due to Thatcher's Computers for Schools scheme, the equipment was out of date, even "primitive."<sup>73</sup> Similarly, less than twenty percent of British schools were connected to the Internet. Among its policy recommendations, the Stevenson Report highlighted the importance of training teachers and creating a market for high-quality British educational software.

Drawing on this report, Blair's government launched the National Grid for Learning with the aim of connecting all 32,000 British schools to the internet by 2002 and encouraging the development of new on-line educational services and content.<sup>74</sup> For example, the *Virtual Teacher Center* supplied teachers with information on curriculum development and IT management and gave them access to educational materials from content providers such as the BBC and Microsoft. The NGfL relied on a combination of public funding and private sector contributions. In October 1997, Blair announced an

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<sup>72</sup> See for example, *Our Competitive Future : Building the Knowledge Driven Economy* published in December 1998 ([www.open.gov.uk](http://www.open.gov.uk)). This paper included a report on the economic importance of knowledge and an outline of public and private sector actions to promote innovation and improve the competitiveness of UK industry.

<sup>73</sup> Stevenson, D. 1997. *Information and Communications Technologies in UK Schools : An Independent Report*. London: The Independent ICT in Schools Commission.

<sup>74</sup> [www.ngfl.gov.uk](http://www.ngfl.gov.uk)



initial investment of £100 million in public funds for new computer equipment in schools. Local authorities bid for these funds and were free to choose their own internet service providers, hardware and software. The government also allocated £235 million from the national lottery to fund teacher training. At the same time, the government provided incentives for private sector participation. For example, the government agreed to lift the line of business restrictions that prevented the British Telecom from entering the broadcasting market in exchange for BT's commitment to wire the nation's schools. After receiving criticism for favoring BT, the government quickly sought the participation of the cable operators. By October 1997 the government reached an agreement with both BT and the cable companies to provide schools with free or discounted internet connections and annual rates of £1 per pupil for unlimited usage.<sup>75</sup> One of the advantages to having a well developed competitive telecom market was that the government had more partners to rally behind its educational program. During a much publicized visit to 10 Downing Street, Microsoft Chairman Bill Gates agreed to help persuade computer manufacturers and other software companies to offer British schools equipment at low costs.

In November 1998, Blair committed an additional £430 million to the NGL and reiterated his goal of connecting all British schools to the internet by 2002.<sup>76</sup> A report by the National Association of Head Teachers indicated that progress had been made in many schools, but that significant disparities across regions remained.<sup>77</sup> The government hoped that the allocation of additional funds would help to remedy this problem and

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<sup>75</sup> Christopher Price "Schools win 100 million to buy IT equipment" *Financial Times* 7 October 1997. Two months later, OfTel approved BT's low tariffs to schools. "BT OfTel and Bill Gates to help put UK schools on line" *Financial Times* 3 December 1997.

<sup>76</sup> "Blair pledges extra 430 million for IT" *Financial Times* 7 November 1998.

ensure that adequate funding was available to all local authorities to install computers, software and internet connections in their schools. In November 1998, the Prime Minister also launched a program "Open for Learning, Open for Business" to make procurement easier for schools by collecting bids from industry and offering schools on stop shopping for new ICT equipment.

The government's other internet policy initiatives revealed a similar reliance on public and private sector partnership. To give another example, New Labour tried to increase the government's own usage of the internet and online applications to improve the delivery of public services and stimulate demand. Blair made a commitment that by 2002 the government would conduct 25% of its business electronically. At that time, the use of the internet and online services in the British civil service was negligible. Government ministries quickly started to offer information online ranging from policy reports to information on permit applications and taxes.<sup>78</sup> The government planned to allow virtually all transactions to be conducted on-line from paying taxes to renewing a passport. Again, working closely with the private sector, the government arranged to have its transactions secured by Barclays and National Westminster Bank. Other projects included a Department of Culture initiative to provide public internet access in libraries and a scheme to subsidize computer rentals for low income families.<sup>79</sup> Like wiring schools, this initiatives brings a whole new group of consumers on-line and helps boost demand.

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<sup>77</sup> Judith Judd, "Schools internet plan crashes" *The Independent* 28 January 1999.

<sup>78</sup> for example [www.open.gov.uk](http://www.open.gov.uk)

<sup>79</sup> Library and Information Committee report, "New Library: the People's Network"; "Strategy launched to foster IT-literate society" *Financial Times* 10 March 1999.

In all of these programs, the government relied on the private sector to make technology choices and to bear a substantial portion of the investment. By encouraging competitive bids from industry and providing incentives for investment, the government succeeded in securing strong private participation in its initiatives. These programs gave private companies valuable experience with new on-line applications and seemed to stimulate the growth of the market for internet technologies. To give an example, the NGfL not only provided schools with free information and content but also helped develop a market for paid online educational services.<sup>80</sup>

### ***Regulatory responses***

In the late 1990s at a time when the continental European regulators focused primarily on establishing rules to govern competition in the newly liberalized telecom markets, the Department of Trade and Industry and Oftel opened a serious public debate on how to adapt the existing regulatory framework to the new challenges posed by the internet and new multimedia technologies. During the election campaign, the Labour party platform raised the possibility of creating a single communications regulator, Ofcom. When New Labour came to power, the DTI started to work on a Green Paper on how to align communications regulation with technological convergence.<sup>81</sup>

As the traditional lines between telecoms and broadcasting blurred, policy makers at the DTI feared that existing regulatory frameworks would create inconsistent or excessive regulation and discourage investment in new technologies. Senior officials at Oftel concurred as they found that many of their traditional regulatory tools and levers no

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<sup>80</sup> see for example, [www.eduweb.co.uk](http://www.eduweb.co.uk). Jack Kenny, "National Grid Update: The shape of things to come" *The Guardian* 12 January 1999.

<sup>81</sup> Department of Trade and Industry. 1998b. *Regulating Communications : Approaching Convergence in the Information Age*. London: Department of Trade and Industry. See also Department of Trade and

longer functioned in the new technological environment. Traditional telecom regulation relied on a direct correlation between the telecom network and telecom services; however, with technological convergence, the regulator found it difficult to control the provision of services through conditions imposed on the communications network alone.<sup>82</sup>

The DTI Green Paper on technological convergence advocated an "evolutionary path" which would work within the existing regulatory structure to provide consistent, coherent regulation of all electronic communications.<sup>83</sup> The DTI argued that regulation should be kept to a minimum, but that there remained a need for content regulation and for economic regulation of bottlenecks, interoperability and universal access. The DTI advocated closer cooperation between itself, Oftel, ITC and OFT in the short term. Although the Green Paper outlined several general models for a new regulatory structure, its authors concluded that the creation of a new communications regulator would be premature. According to the DTI, this more moderate approach took advantage of the flexibility of the British regulatory regime and minimized the risk of creating a new regulatory system without fully understanding the significant changes in technology and markets.

In a series of consultative documents, Oftel recommended more significant changes in the national regulatory framework.<sup>84</sup> Oftel's proposals aimed to reduce the

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Industry. 1998a. *A Fair Deal for Consumers : Modernising the Framework for Utility Regulation*. London: Department of Trade and Industry..

<sup>82</sup> Interviews. London 1997 and 1998.

<sup>83</sup> Department of Trade and Industry. 1998b. *Regulating Communications : Approaching Convergence in the Information Age*. London: Department of Trade and Industry.

<sup>84</sup> Oftel. 1997. *Oftel response to the European Commission on the Green Paper on the convergence of the telecommunications, media and information technologies sectors, and the implications for regulation*. London: Oftel., Oftel. 1998. *Beyond the Telephone, the Television and the PC : Oftel's Second Submission*

regulatory burden on "electronic communications" and encourage a greater reliance on competition law. Oftel hoped to establish a new flexible approach to regulation that would facilitate the transition from the existing sector specific regulation to an "open state" characterized by the "erosion of distributional scarcity and the direct provision of content and services through access control systems."<sup>85</sup> In this open state, communications regulation would be limited to three areas : universal access, content and media ownership. Oftel argued that a new regulatory approach adapted to the new technologies would encourage investment in new networks, content and advanced services in the UK by creating a stable, open environment.

As discussed in Chapter 7, the British market for the internet and on-line services grew rapidly making it Europe's largest market for e-commerce in 1998. As the telecom operators invested in new networks and services, the number of internet users increased steadily and the price of internet access fell considerably. In fact, several services such as BT Click and Dixon's Freeserve offered British internet users free internet access.

### ***THE PLAYERS***

#### ***Market Entry and BT's response***

By January 1, 1998 when the continental European markets first opened to full competition, nearly 200 licensed operators were providing telecom services in the United Kingdom.<sup>86</sup> The pattern of market entry in the United Kingdom was strongly influenced by the duopoly regime and therefore differed considerably from the continental European markets where many competitors entered the liberalized markets at once. When the

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to the Culture, Media and Sport Committee Inquiry into Audio-visual Communications and the Regulation of Broadcasting. London: Oftel..

<sup>85</sup> Oftel. 1998. *Beyond the Telephone, the Television and the PC : Oftel's Second Submission to the Culture, Media and Sport Committee Inquiry into Audio-visual Communications and the Regulation of Broadcasting*. London: Oftel.

<sup>86</sup> OECD. 1999. *Communications Outlook 1999*. Paris: OECD.

British market first opened to competition in the early 1980s, the government licensed Mercury and established a legal duopoly for at least seven years. When the duopoly regime ended in 1991, the pro-competitive regulatory regime made the market appealing to American telecom operators and cable companies. For these foreign firms, the UK also served as a base to expand into continental Europe while the rest of the EU member states gradually liberalized their national markets. By 1998 the major operators in the UK were as follows:

### **UK Telecom Market**

	<i>Major Operators</i>
Local loop	BT, CWC, WorldCom, Colt, Ionic, cable TV companies
National fixed link	BT, CWC, Energis, British Waterways, British Rail
Regional competitors	BT, Scottish Telecom, Torch, Norweb
Resellers	WorldCom, Esprit, Sprint, Telia, Testra, AT&T
Cellular	Vodafone, Cellnet, Orange, One 2 One

Source: Analysys

### ***Mercury***

***"A mouse to make the elephant dance" -- Sir Keith Joseph.***

In 1982 Thatcher's government licensed Mercury Communications as the first competitor to British Telecom. Mercury was initially owned by a consortium of Cable & Wireless, Barclay's Bank and British Petroleum until Cable & Wireless bought out its partners a few years later. Historically Cable & Wireless provided telecom services in most of the former British Commonwealth, but did not operate in the UK. Cable &

Wireless could offer both its technical expertise and its interesting political perspective from being both an incumbent in Hong Kong and the Caribbean and a new entrant in liberalized markets such as Australia.

During the duopoly, Mercury focused on building market share by targeting large business users in the City of London and offering low priced service on the high traffic routes in and between major cities, a strategy known as cream skimming. Investing in its digital network, Mercury met and exceeded the infrastructure investments required under the terms of its license. During the duopoly, Mercury gained a significant share of the large business accounts in the City, but won less than 10% of the total UK telecom market. Although BT's market power and initial problems with the regulatory regime did slow the development of competition, Mercury also made some costly strategic errors.<sup>87</sup> For example, the new entrant focused somewhat narrowly on price and failed to respond quickly enough to quality problems.

British Telecom responded aggressively to Mercury's competitive challenge. First, the former monopolist undertook a sweeping reorganization and reduced its work force by over 100,000. BT also invested heavily to modernize its network and introduce new value added services. In the long distance market, BT leveraged its market power and financial resources very effectively by slashing prices and incurring losses which its smaller competitor could not sustain. With profits of £2 billion, compared to the new entrant's £220 million, BT could simply outspend its rival. After seven years of competition, British Telecom still held 90% of the UK telecom market.

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<sup>87</sup> Interviews, London 1997 and 1998.

***American Telecom operators and cable companies***

After the duopoly review several North American telecom operators and cable companies entered the UK telecom market to compete against BT in the local loop. Nynex, US West and Comcast among others operated cable television franchises and offered telephone services at very low cost over the cable network. These experienced operators were attracted to the UK market because of the liberal regulatory environment and the significant opportunities for growth. Cable penetration was very low by international standards (less than 20%) and competition in local telephony lagged behind the vibrant long distance market. In addition, many of the American operators saw the British market as stepping stone into the large continental European markets which were just beginning to open to competition. The cable companies brought their deep pockets and valuable experience with network operation and marketing to the UK market and challenged BT's dominance in the local loop. Their strategy focused on offering British households innovative packages bundling telephone, cable and later internet services at very competitive prices. Although their subscriber base grew, the cable companies' low prices squeezed revenues. In addition, they experienced a very high churn rate of approximately 30%.

In 1997 Cable & Wireless merged Mercury Communications with three UK cable companies, NYNEX CableComms, Bell Cablemedia and Videotron to create Cable & Wireless Communications (CWC). The merger provided Mercury with direct access to residential customers and was expected to generate considerable cost savings. CWC aimed to become a leading provider of integrated telecom, information and entertainment



services. Through acquisitions, partnerships and investments in its own network, CWC was by 1998 one of the largest carriers of internet traffic in the world.<sup>88</sup>

### *New Generation Competitors*

Finally, several aggressive new operators entered the UK market and targeted large business users. Ionic, Colt and WorldCom offered low prices and high quality innovative services. In addition to using leased lines, many of these “new generation” operators also invested in their own state of the art, high capacity networks in major urban areas. To give an interesting example, Colt obtained a license to build a fiber optic ring network in the City of London in 1992. With its modern, high capacity network, Colt offered high quality customized services primarily to the financial service industry. Unlike the cable companies, Colt's license did not require it to provide access to all customers in its license area, so the operator could focus on serving these large business customers. By 1999 Colt operated in 12 cities throughout Europe and had a market value of £6 billion despite never having made a profit.<sup>89</sup> With these new operators competing for the same sophisticated customers, the market for large corporate accounts became a highly competitive niche.

### *Lessons*

The experience of the competitors in the UK market offer several important lessons. First, British Telecom's massive restructuring provides a compelling example of how a large bureaucratic incumbent can become an aggressive international competitor. Second, the entry of foreign, primarily US telecom operators and cable companies into the telecom market helped to promote local loop competition. Moreover, these

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<sup>88</sup> [www.cwcom.co.uk](http://www.cwcom.co.uk)

<sup>89</sup> Jason Nisse "Corporate Profile: COLT Telecom" Financial Times 18 January 1999.

experienced operators offered innovative bundled services and pricing packages. Finally, overtime, the UK experience suggests that competition eventually leads to industry consolidation.

## CONCLUSIONS

The UK's fifteen years of experience with a competitive telecom market provides valuable insights into the importance of national policy and patterns of market entry over time. One of the most important lessons of the British experience is that the development of competitive markets was a slow difficult process in which national policy played a crucial role. While Oftel struggled with issues of interconnection, retail pricing, number portability and transparency, competition developed at a much slower pace than many expected; in fact, after fifteen years of competition British Telecom held close to 70% of the market. In 1997 Oftel lifted price restrictions in certain competitive market segments; however, sector specific regulation still played an important role in shaping the national market. Oftel not only kept up its fight to promote competition particularly in the local loop but also tried to respond to the regulatory challenges posed by the convergence of telecoms, broadcasting and computing. The British experience suggests that national factors will continue to shape the development of competitive markets in the newly liberalized European markets.

## **PART III : DISTINCT NATIONAL MARKET STRUCTURES AND COMPETITIVE DYNAMICS**

### **CHAPTER 7**

#### **NATIONAL MARKETS: A Comparative Analysis of the case studies**

In France, Germany and the UK the national governments all dismantled the long standing public telecom monopolies and allowed competition in all services and networks. As the state relinquished its traditional means of control over the telecom industry and transferred decisions over pricing and investment to the market, many industry observers called into question the continuing importance of the national governments in the telecom industry. At the same time, the European single market policies and strong competition rules also challenged the ability of the national governments to maintain barriers to competition or adopt divergent regulatory regimes. In the European marketplace national boundaries were becoming increasingly blurred as both the former monopolists and the new entrants established strong regional positions through joint ventures and strategic alliances. In fact, in 1998 twelve different high-capacity pan-European networks were under construction. Finally, the convergence of telecoms, computing and broadcasting led to the rapid growth of the internet and a myriad of new on-line services that crossed borders indiscriminately and were very difficult for governments to control. The fast pace of innovation and the uncertain demand for these new on-line service was also thought to make industrial policy useless if not damaging. These changes led many to predict that a single open European market

for telecommunications would emerge after the member states opened their national markets on January 1, 1998.

The case studies paint a picture that is remarkably different from the popular visions of an open highly competitive European or even global telecom market dominated by a few giant firms beyond the reach of national governments. In each national context, policy makers and firms responded differently to the challenges of market liberalization and technological change. Liberalization and privatization were complex, highly politicized processes strongly influenced by the structure of interests in the domestic telecom industry and powerful ideas about competition. At the end of the difficult reform processes, national policy makers, business interests and unions did not simply step back and let competition in the telecom market develop on its own. Instead, the national decision makers built the political and industrial framework within which competition would develop. The broad European regulatory guidelines gave the national governments considerable discretion to adopt different regulatory regimes to oversee the development of competition and the provision of universal service in the liberalized national telecom markets. The national governments also introduced different industrial policy initiatives and regulations to address the risks and opportunities associated with the growth of the internet. Finally, the new entrants in the liberalized markets were politically powerful local players with very different core businesses and entry strategies in each market.

The three patterns of regulation, industrial policy and market entry emerged. In France the government retained significant influence over a regulatory regime which tended to limit competition and protect the national champion, France Télécom. The

French state also leveraged its considerable resources to pursue an activist internet policy that seemed to replace rather than encourage private sector innovation. In Germany, the government established a pro-competitive regulatory regime; however, the strong political influences over telecom policy and the regulation of on-line services at both the Federal and regional levels created a great deal of uncertainty about future regulatory decisions. In the UK, the liberal regulatory regime and the government's market oriented internet policies were designed to actively promote competition and encouraged foreign firms to enter the market.

Despite the powerful economic, technological and political pressures for convergence, these distinct national patterns of regulation and technology policy not only persisted but also had important competitive implications in the liberalized markets. The national regulations and patterns of market entry affected how much competition was likely to develop in the national market and what kind of competition (price-based, service or facilities based). As discussed further below, the national regulatory regimes, internet policies and entry strategies also had both direct and indirect effects on the investments in new technologies and the development of the internet.

This chapter will first review the major differences in the national regulations, industrial policies and patterns of market entry and their competitive implications. I will then take a closer look at what actually took place when the national markets opened to competition.

### ***Regulation***

Because of the incumbent operators' enormous market power, national regulatory decisions were crucial to the development of the newly liberalized telecom markets. In

fact, most of the new entrants in the European markets admitted that their survival depended primarily on the regulator.<sup>1</sup> In each case, the national regulatory regimes differed substantially and so too did their competitive implications. Three key components of the national regulatory regime were particularly important to the development of the national markets.

### ***The Independence of the Regulator***

Public ownership stakes in the former monopolists created strong incentives for political leaders to intervene in regulatory decisions to limit competition and boost the value of the governments shares. National regulators also faced political pressure to slow unpopular tariff rebalancing, to protect the interests of national equipment manufacturers and to safeguard employment. Variations in the institutional structure of the regulator and the division of labor between the ministries and the regulator meant that regulatory decisions in France and Germany were much more vulnerable to political intervention than the UK regulator who enjoyed considerable legal independence.

### **Major statutory differences among the national regulatory authorities**

	<b>France</b>	<b>Germany</b>	<b>UK</b>
<b>Regulatory authority</b>	ART	RegTP	Oftel
<b>Institutional Structure</b>	independent agency	agency within the Ministry of Economics	independent agency
<b>Ministerial authority</b>	social and political aspects of regulation incl. retail pricing, universal service	broad veto powers	limited to licensing and appointment of Director General
<b>Other oversight</b>		Länder political parties courts	

<sup>1</sup> Interviews, London 1997 and 1998; Germany 1997; Paris 1998.

In France, the government did use its regulatory authority to overturn a decision that the regulator made against France Télécom on internet rates for schools. The German Minister of Economics also intervened in the incumbent operator's favor in a crucial decision on the charges for competitors to access to Telekom's local loop. The Economics Minister's willingness to intervene to protect Telekom and the strong influence of the political parties, the Länder and the courts over regulatory policy combined to create a great deal of uncertainty about the ability of the RegTP to preserve its liberal stance. In the UK, Oftel's legal independence and the government's commitment to competition helped Oftel to maintain its pro-competitive, consumer oriented approach to regulation in the face of political pressure from BT and Members of Parliament.

### ***Interconnection***

The EU regulations gave preference to commercial interconnection agreements among operators; however, in all three cases the operators were unable to agree on the terms and costs of interconnection and appealed to the regulator to do so.

#### **1998 Interconnection Rates (ECU/100 per minute)**

	<b>Local</b>	<b>Single Transit</b>	<b>Double Transit</b>
<b>EU recommended range</b>	0.6-1.0	0.9-1.8	1.5-2.6
<b>France</b>	0.70	1.71	2.52
<b>French total w/uso &amp; ADC*</b>	1.27	2.40	3.22
<b>Germany</b>	0.99	1.69 - 2.14	2.58
<b>UK</b>	0.61	0.87	1.69

Source: EU Commission Interconnection Tariffs in Member States 1st December 1998 europa.eu.int; \* Cegetel contribution to the round table organized by the European Commission on the liberalization of the telecommunications market, 1998.

Interconnection was one of the largest cost to new entrants. The low interconnection rates in Germany and the UK encouraged competition by allowing the new entrants to undercut the incumbents' high long distance prices. In Germany the provision of unbundled access to Telekom's local loop and the application of low interconnection rates to resellers encouraged the rapid development of price based service competition. In contrast, the French interconnection regime tended to limit competition. An operator connecting to France Télécom's network had to pay an additional charge to compensate France Télécom for the costs of the access deficit and its universal service obligation. By increasing the real cost of interconnection well above the EU recommended ranges, these supplementary charges squeezed the new entrants' margins and limited their ability to compete on price.

### ***Universal Service***

Universal service obligations reflect a political commitment to ensuring that all citizens have access to basic telecom service; however, these policies also have competitive implications in the national market.

### **Universal Service**

	<b>France</b>	<b>Germany</b>	<b>UK</b>
<b>Provider</b>	FT	DT	BT
<b>Compensation in 1998</b>	FF 6 billion	none	none
<b>Mechanism</b>	fund and ADC	market fund if market fails	fund
<b>Possibility for alternative provider</b>	no	yes auction procedure in place	yes



Although all three of the incumbent operators were obliged to provide similar levels of universal service in their domestic markets, only France Télécom received compensation. In both Germany and the UK, the decision not to compensate the incumbent for providing universal service was based on the judgement that there was no net cost. In contrast, the French regulator reached a very different conclusion estimating the cost of providing universal service to be FF 6 billion in 1998. France Télécom was entitled to compensation through a fee added to the interconnection charges and a universal service fund to which all operators had to contribute. These charges raised the new entrants' costs and compensated France Télécom for costs which according to some analysts did not exist. In addition, France Télécom's larger responsibility for public service conferred commercial benefits on the former monopolist. For example, the extremely low internet access rates which France Télécom offered schools as part of its public service mandate give an advantage to France Télécom's on-line business and was challenged in the courts as anti-competitive.

To summarize, the French protectionist regulatory regime and the government's continuing authority over regulatory decisions tended to limit competition and favor the national champion, France Télécom. The German liberal regulatory regime favored the development of price competition; however, the strong political influences over the regulatory policy raised serious doubts about the regulator's ability to maintain its pro-competitive approach. In the UK, the independent regulator's use of asymmetrical regulation encouraged the development of facilities based competition.

***Internet Policy***

On the surface the national governments' initiatives to promote the development of the internet appeared to be quite similar, as leaders in France, Germany and the UK all emphasized the importance of private sector leadership and advocated an enabling role for government. However, important differences emerged in the resources national policy makers committed to internet initiatives, the private sector partners they chose and the regulatory responses they adopted. These variations in the national internet policies had important implications for private sector investments in on-line services and high-capacity networks.

In France the government's activist internet policy succeeded in wiring the majority of the nation's schools and allowing the state to play an important role as a lead user. However, in the market place, the French information society initiatives tended to favor France Télécom and failed to stimulate significant private sector investment. In Germany, the government committed only limited resources to internet initiatives such as its schools on-line program. Although this hands-off approach to industrial policy was competitively neutral, German policy makers missed an important opportunity to stimulate demand, particularly among residential users. The controversial German multimedia law regulating on-line services received wide criticism for discouraging investments in new infrastructure and services. In the UK, the market oriented approach to promoting the internet provided strong incentives for private investments and succeeded in building an effective partnership between the public and private sectors.

### ***Market Entry***

The differences in the new competitors' core businesses and entry strategy had important consequences in terms of both the development of competition and investment in new technologies. Some of these differences reflect variations in the national regulatory regimes. For example, the growth of low price resellers in Germany resulted from the very low interconnection rates that applied to both network and service operators. In the UK, when the duopoly ended in 1991, foreign operators were attracted to the market in large part because of the liberal regulatory regime. However, in each case large, politically powerful national firms announced their intention to enter the market well before the regulatory regime was established and actually participated in the political debates over liberalization.

### **New Entrants**

	<i>Firm</i>	<i>Core business</i>
France	Vivendi	water and media
	Bouygues	industrial
	Lyonnaise des Eaux	water and cable TV
Germany	Mannesmann	engineering
	o.tel.o Veba/RWE	electric power
	Viag	electric power
	MobilCom...	telecom (resale)
UK	Mercury (CWC)	telecom
	US Cable Cos/RBOCs	cable TV and telecom
	WorldCom Qwest Colt	telecom

In France, the primary competitors to France Télécom were large industrial conglomerates with interests in wireless communications, cable television and media. Although these groups announced their intention to leverage their media interests and provide bundled services, they failed to differentiate themselves from the incumbent and

seemed to be positioning themselves for a cozy oligopoly. In the German market, the large energy groups invested heavily in their own networks and focused on gaining market share in the growing long distance market. Resellers such as MobilCom also offered very low long distance rates using Deutsche Telekom's own network. These entry strategies encouraged the development of price based competition and massive over capacity, but limited investments in new technologies. Under the duopoly regime, Cable & Wireless' Mercury targeted large business users and the markets in and between major cities precipitating a dramatic fall in long distance prices. When the market opened to full competition, foreign cable companies started to challenge BT's dominance in the local loop offering residential customers low price, bundled service.

Three different patterns of market development emerged when competition was introduced into the national telecom markets with different implications for the development of competition and investments in new technologies in the liberalized markets. The following table summarizes the these models.

	<b>Model</b>	<b>Market Implications</b>
<b>France</b>	protectionist regulation high political involvement in regulation activist internet policy "me too" entrants	limited competition limited investment in new technology
<b>Germany</b>	pro-competitive regulation high political involvement in regulation internet regulation network oriented entrants resellers	intense price competition limited investment in new technology
<b>UK</b>	asymmetric regulation independent regulator market oriented internet policy foreign operators and cable cos	strong facilities based competition high investment in new technologies

***A year later: initial indicators of market development***

Initial statistical evidence indicates that the liberalized markets are in fact developing as the analysis of the national regulation, industrial policy and market entry in the case studies predicts. One year after the French and German markets opened to full competition in network and services, there were significant differences in terms of the new entrants' market share, prices and investments in new technologies. 1998 figures for the UK are included as benchmarks for the voice market and the development of the internet and on-line services is compared across all three cases.

Competition developed slowly in the French market and by the end of 1998 France Télécom still held an estimated 95% of the national market. While France Télécom introduced a number of popular pricing packages for residential users to select, French households had a limited choice of operators. A year after the market opened to competition, Cegetel was the only one of the large new entrants to launch its residential long distance service. Bouygues' 9 Télécom repeatedly delayed its entry into the market and pushed the launch of its business and residential service back well into 1999. Because of regulatory disputes over the use of the cable network, Suez-Lyonnaise could only offer voice service in the small city of Annecy. The problems that these two powerful domestic firms encountered highlighted the difficulty in entering a market in which France Télécom maintained a very strong position both in the market and in the political process. In total only thirty six licenses were issued in the French market.

PSTN national long distance call charges  
(off-peak 3 minute call in euro excluding VAT)

	January 1998	January 1999
<b>France</b>	.26	.26
<b>Germany</b>	.48	.16
<b>UK</b>	.16	.14

Source: Eurodata<sup>2</sup>

Long distance prices in France were lower than Germany's when the markets opened to competition because France Télécom was able to rebalance its tariffs prior to liberalization. During 1998 prices in both the long distance and local markets remained stable, although some calling schemes may have generated greater savings for consumers than the Eurodata statistics indicate. According to one estimate, the average business user's monthly bill fell by 15% whereas households only benefited from a 3% drop.<sup>3</sup>

When the German market opened on January 1, 1998, competition developed much more rapidly than many anticipated. In only one year, Deutsche Telekom lost an estimated 30% of the long distance market and cut its retail prices by as much as 70%. Some analysts predicted that Telekom's peak time long distance rates could fall even further from 17-19 pfennig a minute to 10 pfennig. Despite 6.5% growth in the market, Deutsche Telekom net sales increased by only 1.5% to DM 68.7 billion.<sup>4</sup> The incumbent estimated that it lost at least DM 2 billion in domestic sales because of increased competition.<sup>5</sup> The biggest winners in the German market were consumers who enjoyed low prices and aggressive resellers such as MobilCom which claimed to have gained as

<sup>2</sup> Eurodata "Report on Telecoms Tariff Data as of 1 January 1999" europa.eu.int

<sup>3</sup> "France: Fixed line tariffs fall again as era of innovation opens" *Financial Times* 18 March 1999

<sup>4</sup> "Still reeling from the effects of liberalization" *Financial Times* 18 March 1999.

much as 10% of the long distance market by offering extremely low prices. In 1998 MobilCom quadrupled its revenues to DM 1.47 billion and reported a nine fold increase in profits to DM 250.5 million. In total more than 200 new licenses were granted and 130 were in the pipe line. In addition to the proliferation of resellers, several small city carriers entered the market providing German consumers in urban areas with a great deal of choice, but according to some critics leading to a fragmentation of the market. As the large new entrants invested heavily in infrastructure, the accelerating price war put considerable pressure on their margins. Mannesmann quickly emerged as the strongest of these three groups and generated close to DM 1 billion in sales from its new fixed network services in 1998. o.tel.o experienced delays in launching its fixed line service and made a major strategic error by requiring customers to pre-register for its long distance service. By the end of the year o.tel.o incurred losses of more than DM 2 billion and in April 1999 o.tel.o sold its fixed line business to its competitor Mannesmann for DM 2.25 billion. Mannesmann hoped that this investment would generate economies of scale and help the firm to strengthen its position in the highly competitive German market.<sup>6</sup> Industry experts expected consolidation to continue especially among the small local carriers.

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<sup>5</sup> "Germany: Changing times and fortunes" Financial Times 18 March 1999

<sup>6</sup> Tony Barber, "Mannesmann agrees \$1.2bn Otelo deal" Financial Times 3-4 April 1999.

**UK Market 1998**

<b>Total Licenses Issued</b>	<b>BT market share international long distance</b>	<b>domestic long distance</b>	<b>local access</b>
260	89%	76%	49%

**Leading Operators 1998 revenue (national fixed and mobile telecom revenues)  
ECU million**

<b>France</b>		<b>Germany</b>		<b>UK</b>	
France Télécom	22,353	Deutsche Telekom	30,981	British Telecom Cellnet	17,180
Cegetel SFR	2,896	Mannesmann Arcor/Mobilfunk	4,668	CWC	3,235
Bouygues	596	Debitel	1,534	Vodafone	2,715
Siris	66	o.tel.o E Plus	1,145	Orange	1,408
Omnicom	35	MobilCom	752	One2One	1,016
		Viag InterKom	204	Telewest	380
		Esprit	102	Energis	321
		Colt	87	Colt	194

Source: Financial Times

**PSTN local call charges**  
(off-peak 3 minute call in euro excluding VAT)

	<b>January 1998</b>	<b>January 1999</b>
<b>France</b>	.09	.09
<b>Germany</b>	.11	.11
<b>UK</b>	.06	.06

Source: Eurodata



The major similarity across the three cases was that local loop competition remained limited and local call prices were stable. Residential monthly access charges also remained unchanged. Even in the UK where competition was the most developed BT held an estimated 85% of the local call market and local rates remained relatively high.

### ***The development of the internet***

A closer examination of the development of the internet in each national market provides valuable insights into the impact of national regulation, industrial policy and market entry on the diffusion of new technologies. The national telecom policies and telecom operators' strategies have direct and indirect effects on the development of the internet. First, policies designed to promote the growth of the internet and the regulation of on-line services influence the risk associated with investments and may also affect demand. Second, the telecom operators' investments in new network technologies has a direct impact on capacity, while the extent to which they offer internet access and on-line services affects the development of competition in these markets and the choices available to domestic users. Finally, several studies argue that the development of the internet and on-line services depends heavily on the competitive environment in the telecom industry. According to reports by the OECD and Forrester a competitive telecom market with more than one local access network encourages the growth of the internet and electronic commerce by lowering the cost of internet access and increasing capacity.<sup>7</sup>

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<sup>7</sup> OECD, 1999. *Building Infrastructure Capacity for Electronic Commerce*. Paris: OECD.; Forrester, 1998. *European New Media Strategies*: [www.forrester.com](http://www.forrester.com).; This argument is also made in High Level Group on the Information Society, 1994. *Europe and the Global Information Society*. Brussels: European Union.

The following statistics provide a sketch of the development of the internet and electronic commerce in France, Germany and the UK. The results are consistent across all the indicators with the UK market developing much more rapidly than the two continental markets and France lagging on all counts.

#### Internet Users (million) Jan. 99

France	Germany	UK
3	7.3	10

Source: Financial Times; www.headcount.com

#### Off-peak internet access baskets (US\$PPP) 5/98

	PSTN charges *	ISP	Total
France	35.22	13.06	48.27
Germany	36.22	32.21	68.44
UK (average)	31.34	14.83	46.17
UK Telewest	21.87	16.33	38.20
UK Freeserve	21.87	0.0	21.87

\* monthly line rental plus 20 hours local call charges per month

Source:OECD

#### Internet hosts and servers per 1000 inhabitants July 98

	France	Germany	UK
Internet hosts *	11.4	18.3	28.4
Web servers	0.71	2.01	3.16
Secure web servers for e-commerce	0.43	0.68	1.41

\* domain and .com, .net, .org

Source: OECD

**1998 on-line revenues US\$ millions**

France	Germany	UK
58	234	257

Source: Forrester

Telecom operators' investments in internet technologies also varied considerably across the three cases in 1998. British Telecom offered multiple internet access services including a new free service, BT Click designed to compete with the retailer Dixon's very successful Freeserve. The cable companies provided residential users with bundled services that included telephony, cable TV and internet access at very advantageous prices. In the French and German markets, the incumbents were the only telecom operators to establish a strong presence in the market for internet access and on-line services. France Télécom's Wanadoo internet service provider held approximately 30% of the market. Although France Télécom provided some on-line services including the phone directory and an e-commerce site Télécommerce, the incumbent received strong criticism from the government and firms for not accelerating the transition from Minitel to the internet. The new entrants in the French telecom market, Bouygues and Suez-Lyonnaise had planned to offer internet access over their cable networks, but they encountered serious regulatory problems which prevented them from doing so in 1998. Prices for internet access in France were relatively high leading internet users to organize a series of boycotts to try to bring prices down. In response to pressure from the government, France Télécom reduced its internet access charges for business users by 15%, but offered no discounts to residential users.

In Germany, Deutsche Telekom's T-Online internet service was very successful and held 56% of the domestic market. Telekom invested in its ISDN network and in ADSL network trials, but as in France these investments remained limited. The incumbent's competitors in the newly liberalized telecom market focused primarily on the long distance voice market and did not offer internet access or on-line services. Moreover, while prices fell in the long-distance market, the price of internet access and the local call charges remained high. The development of the internet in Germany was fragmented with innovation and investments concentrated in certain regions such as NRW and Bavaria and in certain industries. In contrast to the limited investments in internet technologies by the telecom operators, several large German firms, notably media firms, banks and auto manufacturers invested heavily in on-line services, leading analysts to predict that growth would accelerate in the market for business to business e-commerce.

By the end of 1998, national industrial policy initiatives also produced different results. For example, the number of schools with internet access was greater in France and the UK than in Germany. All of French schools received internet service from France Télécom; whereas British schools could choose among several competing internet service providers which could put together different packages of services. Under the UK government's market oriented schools on-line policy, a private market for on-line educational services and content also started to develop. Industry experts anticipate that these programs will help to stimulate demand as younger generations bring their internet

skills into the workforce and into the marketplace for consumer goods and services; however, such results will take several years to realize.<sup>8</sup>

Industry experts and scholars point to a variety of factors that account for the differences in the development of the internet including government policy, the flexibility of large firms, the availability of venture capital and public attitudes about technology and consumer tastes.<sup>9</sup> What my work focuses on how two factors, the development of the national telecom market and national industrial policies, contribute to the national differences in the growth of the internet and the market for on-line services. Several important observations can be made based on the French, German and UK cases.

First, since internet users had to pay local call charges to reach their internet service providers in all three markets, infrastructure competition in the local loop helped to lower the cost of internet access to households. In the UK where the regulatory regime promoted facilities based competition, a British consumer using Telewest for local phone service and Freeserve as an internet service provider could access the internet for less than half the cost of a French user who had no choice in local phone service. Second, in both France and Germany, the slow development of alternative infrastructure and the operators' limited investments in new network technologies also created capacity constraints. Both users and firms offering on-line services complained that limited capacity slowed the speed of the internet to such a degree that using the internet to gain basic information and conduct simple transactions was more time consuming and

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<sup>8</sup> Statistics that broke down the growth in internet use and on-line expenditures according to age group were unavailable in the three countries. It would be valuable to see for example whether French teenagers who had internet access at school spent more time on-line than their German peers.

<sup>9</sup> Interesting research on what factors affect the growth of the internet has been conducted by Forrester and BRIE. See also Castells, Manuel. 1996. *The Rise of the Network Society*. Malden, MA: Blackwell. Kahin, Brian, and Ernest J. Wilson, eds. 1997. *National Information Infrastructure initiatives : vision and policy design*. Cambridge: MIT Press.

expensive than using the phone.<sup>10</sup> Third, the activist French industrial policies seemed to reinforce France Télécom's dominant position and did little to stimulate private sector investment in on-line services, whereas the market oriented British internet policies encouraged competitive offerings and private investments. In Germany the results were mixed as the regional industrial policies seemed to help promote private sector investment, but the national policies had limited effects on the market.

Finally, in France regulatory disputes and the lack of jurisdictional clarity between the telecom and audio-visual regulators kept the new entrants from offering internet access over the cable network. The effects of the German Multimedia Laws were, however, less clear. Critics of the law contend that the regulation of the internet discouraged investment and accounted for the slow development of the German market for on-line services through 1998. In the longer term, the German multimedia laws may limit the flexibility of German firms and policy makers to adapt to future changes in technology and in the market by mandating certain encryption technologies and security measures. The dual state and Federal multimedia laws make it very difficult for policy makers to respond quickly to changes in technology and the market since both versions would have to be amended. Moreover, the on-going jurisdictional dispute between the Länder and the Bund creates a significant risk of inconsistent or over-regulation as Federal and regional leaders vie for the authority to regulate new on-line services. In contrast, the British government decided not to adopt measures to regulate the internet or mandate certain security measures in order to maintain flexibility. To facilitate technological convergence, British policy makers also established procedures for the

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<sup>10</sup> Interviews, France 1998 and Germany 1997.

telecom and broadcasting regulators to work together and proposed creating a single regulator to oversee telecommunications, broadcasting and new multimedia services.

The question that remains open is whether the differences in national market structures and competitive dynamics will endure over time. The British experience suggests that the different models will continue to influence competition in the telecom market and the development of the internet and the national market for on-line services. In the UK experience regulation and industrial policy continued to play an important role in the telecom market not only in the short term, but over the medium to long term as well. Fifteen years after competition was first introduced in the market and eight years after the duopoly ended, Oftel remained vigilant in its regulation of the local loop and began to examine ways of adapting the existing regulation to technological convergence. As the British regulation and industrial policy evolved, it did so within the policy framework established at the time of liberalization. The commitment to promoting facilities based competition, the independence of the regulator and the market oriented approach to investments provided the framework within which decision makers responded to new challenges and pressures. In each national context, existing structures may make certain policies or business strategies more costly and others more effective or more desirable.

## CONCLUSIONS

This dissertation shows how distinct market structures and competitive dynamics persist in the telecom industry even as national markets are liberalized throughout the European Union. When the national telecom markets in France, Germany and the UK opened to competition, there were significant differences in the national regulatory regimes, internet policies and patterns of market entry. These distinct policy choices and entry strategies provided very different frameworks within which competition would develop and the new markets for the internet and on-line services would grow. Indeed, in each national context, the markets varied as to the intensity of competition, the extent to which telecom operators invested in new technologies and the strength of political influences over the telecom market. While the differences in these three major European markets provide compelling evidence of the persistent diversity in national market structures in the dynamic telecom industry, the extent to which the national patterns of market development can be generalized to other countries and other industries greatly enhances the value of my findings.

### *Cross country comparisons*

The policy frameworks and market dynamics that characterized the three different models of market development in the case studies can also be observed in other advanced industrial countries and in developing nations. In contrast to the European Union, one of the primary objectives of telecom reform in developing countries was to increase telephone density and modernize the national infrastructure. In Latin America for example most of the national governments sold the national public operator to a foreign telecom company and postponed market liberalization for a fixed period of time in



exchange for substantial investment commitments. Nevertheless, the development of the national telecom markets not only differed across Latin American countries, but also followed similar patterns to those observed in the UK, France and Germany.<sup>1</sup>

In the UK the liberal regulatory regime and the strong, independent regulator encouraged the development of a highly competitive market. While the government relied primarily on strong facilities based competition to encourage investment in new technology, policy makers also adopted market oriented industrial policy measures to promote the use of the internet in schools and public administrations. As experienced telecom operators and cable companies entered the market, consumers enjoyed lower prices, innovative services and greater choice in the long distance market and increasingly in the local loop. The development of the national telecom markets in the United States, Scandinavia, Chile and Peru all closely resembled the British model.

To take the example of Chile, the Chilean government became the first in the region to privatize its national public telecom operator CTC and long distance operator Entel in 1988. During the next few years investments increased nearly four fold; however, the lack of a clear licensing and regulatory regime hindered the development of competition in the liberalized long distance market. In 1994 a new telecommunications law opened the Chilean market to full competition and established a strongly pro-competitive regulatory regime. To encourage the rapid development of competition in the long distance market, the 1994 law created a multi-carrier system allowing customers to choose among competing operators on a call by call basis. The liberal rules allowed virtually free entry for new competitors and by 1998 eleven long distance carriers and

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<sup>1</sup> For an overview of telecom liberalization and regulation in the region see Stafiliadou, Maria. 1996. Cross-Country Survey of Telecommunications Regulatory Structures. Washington, DC: World Bank. and the ITU

five local operators provided telephone service in the highly competitive market. Merely two months after the new law came into effect, international long distance tariffs fell from an average of 750 pesos per minute to 114 pesos in December 1994 making it less expensive to call the United States from Chile than the other way around.<sup>2</sup> In the local loop, cable companies started to invest in their own fiber optic networks in Santiago and some of the provinces to compete with CTC.

Although it remained part of the Ministerio de Transportes y Telecomunicaciones, the Chilean regulator, Subtel (Subsecretaría de Telecomunicaciones) maintained a pro-competitive stance as it enforced the liberal telecom law and tried to promote competition in the local loop. The Chilean government also took a market oriented approach to encouraging investment and increasing telephone density. For example, policy makers established a system of competitive tendering for the provision of payphones in under-served villages which awarded the contracts on the basis of costs and the speed of installation. As in the UK, Chile's open market and pro-competitive regulatory regime attracted considerable foreign investment and made Chile an attractive launching ground for firms that planned to expand across the region. For example, FirstCom from the United States invested in the Chilean long distance market to gain experience operating in the region and then started to build a fiber optic network in Peru and Colombia.

In France the state exercised its considerable authority over telecom regulation to limit the development of competition and protect the incumbent operator. To promote investments, the government protected the incumbent's revenue stream and pursued an activist industrial policy. Yet, as France Télécom retained their dominant position in the

national market, investments in alternative infrastructure and advanced technologies remained limited. Prices stayed relatively high and consumers had little choice of operators or bundled service packages. Japan, southern Europe, Argentina and Venezuela all follow a similar pattern of strong state intervention and moderated competition.

In Argentina the telecom market has not yet opened to full competition, but the approach to liberalization, regulation and industrial policy closely parallel the French model. The Argentine government privatized the state-owned telecom operator, Entel in 1990 and created two operators, Telecom Argentina in the north and Telefónica de Argentina in the southern portion of the country. To promote infrastructure investment and increase penetration, the two private operators were allowed to maintain their legal monopolies at least until 1997 with the possibility of an extension until 2000 if investment criteria were met. The monopoly operators comfortably met the government's investment targets while their earnings grew steadily. As in France, policy makers tried to encourage investment by protecting the incumbents' revenues rather than promoting competition.

The national regulator, the Comisión Nacional de Comunicaciones established in 1996 under the Ministerio de Economía y Obras y Servicios Públicos was subject to considerable political intervention and struggled to establish clear and consistent rules in the liberalized mobile market. The Ministry had broad authority over telecom regulation including the right to determine licensing terms, interconnection rates and retail tariffs and the President of Argentina also had formal oversight on all telecom policy. In 1997

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<sup>2</sup> Imogen Mark "CTC plans to be everywhere at once as Chile opens up to all-comers" Financial Times 22 September 1995

President Menem announced that the fixed line monopolies would be extended until 1999 at which time the two incumbent operators could compete against each other nation-wide. According to Menem, two more carriers would be licensed shortly thereafter and a total of eight operators could enter the market by end of 2000.<sup>3</sup> The President also decided to proceed with tariff rebalancing prior to liberalization despite public protests over the increased monthly access fees. As in France, rebalancing and the slow, controlled introduction of competition into the market strengthened the incumbents' competitive position.<sup>4</sup>

The German model is the hardest to define because of the uneasy coexistence of a pro-competitive regulatory regime and multiple strong political influences over telecom policy. Policy makers' effort to promote investment in new technology were fragmented with limited industrial policy at the Federal level, some ambitious initiatives in the Länder and multimedia regulation from both the national and regional governments. As strong regional new competitors and resellers entered the market, competition developed quickly, but a great deal of uncertainty remained about the future policy environment. The parallels between the development of the German market and those in Italy and Brazil help to show that Germany is not just a random mix of the competitive UK and the protectionist French model, but rather a discrete pattern of liberalization and market development. In Italy the major political parties in the parliament and government ministries competed to influence the liberalization process and the development of the national telecom market. Powerful new entrants, such as Berlusconi's Mediaset and the electric power company Enel, wielded considerable influence in the political process and

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<sup>3</sup> Clifford Krauss "Argentina to hasten end of phone monopoly" New York Times 11 March 1998

<sup>4</sup> Mathew Doman "Reforms provoke protests" Financial Times 19 March 1997

posed a significant challenge to Telecom Italia in the market place. Although the national regulatory regime was liberal, industry experts questioned the ability of the new regulatory authority to enforce the rules given the strong political intervention in the market.<sup>5</sup> Competition developed rapidly in certain segments of the market and as in Germany consolidation began in 1999 with the spectacular takeover of Telecom Italia by its rival Olivetti. The diffusion of new technologies was very uneven as industrial policy initiatives, private sector investment in on-line services and the growth of the internet varied considerably across regions.

In Latin America, Brazil follows a similar pattern. Liberalization and privatization proceeded slowly in the face of opposition from the national and state policy makers who traditionally used Telebras and its subsidiaries as a source of political patronage. In 1998 the Brazilian government sold Telebras in twelve units, one long distance, three fixed operators and eight A-band cellular operators, for a total of \$18.92bn. The government then began to auction competing B-band cellular licenses and so-called mirror licenses for fixed-line competitors in three regions and the long distance market. There were considerable variations in the quality and availability of service in different parts of the country. Whereas Bell Canada purchased the Sao Paulo mirror licenses and promised to invest more than \$1 billion, the government had trouble soliciting bids for the licenses which covered more remote, less developed areas of the nation.<sup>6</sup> In 1999 the regional operators were allowed to compete in the long distance market. To encourage investment in infrastructure, the government maintained duopolies within the regions until 2001. Competition did, however, develop more rapidly than

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<sup>5</sup> Interviews, Rome, 1996.

<sup>6</sup> "Sell-off to answer calls for change" Survey of Brazilian Privatization Financial Times 26 May 1999

anticipated as low cost cellular operators began to compete directly with the fixed line service providers in remote areas where fixed line penetration remained low.

The liberal regulatory regime encouraged competition to develop, but as in Germany, the independence of the new regulator, the Agência Nacional de Telecomunicações (Anatel) was challenged by the strong political influences over telecom policy. The danger of political intervention and corruption was highlighted shortly after privatization, when the telecom minister resigned amid charges that he favored a Brazilian bidder backed by state funding when awarding one of the regional licenses. The government also by-passed the regulator after technical problems caused serious service interruptions when competition was first allowed in the long distance market. While the telecom regulator was still considering what action to take, the Justice Minister fined the telecom operators up to \$1.8mn. The Justice Minister also threatened that the government would revoke the operators' licenses if service did not improve.<sup>7</sup>

The patterns of liberalization and market development elaborated in the case studies serve as valuable templates for identifying the key policy decisions such as the structure of the regulator and predicting the market implications of the alternative policy options. For example, a clear, pro-competitive regulatory regime supported by an independent regulator is likely to attract significant foreign investment as was the case in the UK and Chile which both became regional hubs for foreign telecom operators. Markets which have been liberalized longer also provide valuable indications of how a national market with a similar pattern of regulation, industrial policy and market entry is likely to evolve. The experience of the French market since 1998 allows us to predict

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<sup>7</sup> "Brazil rings in telecoms competition" *Financial Times* 5 July 1999; "Brazil telephone group faces inefficiency fines" *Financial Times* 29 March 1999

how the Portuguese or Argentine markets may develop when they open to competition in fixed networks and basic voice service.

The emergence of similar policy frameworks and competitive dynamics in several countries also could help to illuminate the origins of the different national responses to market liberalization and technological change. A deeper exploration of the parallels in the structure of interests or ideas about competition in countries where the liberalized markets developed in similar ways could improve our understanding of why certain policies are adopted in a given country. For example, Thatcher, Reagan, Pinochet in Chile and Fujimori in Peru all believed strongly in the benefits of free market competition and their governments all took an aggressive, pro-competitive approach to telecom reform. Looking at the structure of interests, in Germany, Italy and Brazil the traditional involvement of many competing national and regional interests in telecom policy provided many avenues for the politically powerful new entrants to influence liberalization and regulatory reform and counterbalance the incumbent's demands for protection.

A closer examination of the development of the liberalized markets for financial service, commercial airlines or electric power in France, Germany and the UK could also provide valuable insights into the origins of the differences in national regulation, industrial policy and market entry. Controlling for industry specific variables, such comparisons could shed light on how national policy decisions are influenced by the structure of national interests, ideas about competition and national institutional factors. Cross-sectoral comparisons may help to probe the important question of whether national governments are locked into certain patterns or whether there is room for political

leadership and policy innovation. National traditions provide rich reservoirs of ideological, cultural and political resources which can come to the fore through experimentation, leadership, or exogenous shocks and serve as the foundations for new national institutional arrangements. The way in which national policy makers draw on these resources in other industries may help us to understand what options are available to national policy makers to adapt to future challenges and how national differences can be reproduced over time.

### ***Industry comparisons***

The policy decisions and patterns of market entry that shaped the development of competition in the liberalized telecom markets in the UK, France and Germany also display strong parallels to other industries within those same three countries. During the 1980s and the 1990s, the national governments began to introduce competition and foreign investment into the traditionally closed markets for financial services, commercial airlines and electric power. As in the telecom industry, the liberalization of the national markets, the growth of international alliances and foreign direct investment and European Union single market policies challenged the ability of national governments to influence these industries and generated strong predictions of globalization. To take the example of financial services, the introduction of the Euro, the alliances among European stock exchanges and the rapid consolidation of the US banking sector led many analysts to predict that a single European market for financial services would emerge dominated by a few large pan-European banks. The European Union also adopted measures to harmonize national regulations and facilitate the cross-border provision of financial services. At the same time, technological change also lowered the



cost of market entry by allowing banks to automate routine processes and offer on-line services over the internet.

The cross border provision of financial services within the EU did, however, remain very limited in 1999. According to some industry leaders, one of the major impediments to the development of a single market in financial services was the divergent national regulations and regulatory barriers to international investments.<sup>8</sup> In the securities industry, retail investors faced high fees to invest on a foreign stock exchange and had to contend with divergent policies regarding shareholders' rights. Furthermore, each European exchange had a different regulator and very different rules for accounting practices, information disclosure and the treatment of minority shareholders. In the case of pension funds, there was no mutual recognition of prudential controls within the EU and many of the member states limited national pension funds' investments in other European markets.

Vogel's study of the liberalization and regulation of financial services in the UK and Japan shows how the national processes of liberalization and regulatory reform produced regulatory regimes that were very different across the two cases, but very similar to the telecom reforms within each country.<sup>9</sup> In the mid 1980s, British policy makers adopted aggressive reforms to liberalize the banking sector, the stock exchange and the savings and loan institutions. By lifting long standing regulatory restrictions, these reforms aimed to increase competition and make the City of London an international financial center. For example, in the securities market, the Big Bang of

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<sup>8</sup> "No SECs please, we're European" The Economist 21 August 1999. Interviews, London and Germany 1998.

October 1986 opened the Stock Exchange's membership to banks and foreign institutions, eliminated fixed commissions and allowed firms to serve as both brokers and market makers. At the same time the Financial Services Act established an independent regulatory agency and several self-regulating bodies to oversee the development of the market and guard against fraudulent practices.

The parallels between the reform of financial services and telecoms also appeared to be strong in France where the liberalization of financial services was led by the state. Between 1983 and 1987, the French government enacted a series of measures designed to modernize the national financial system. During this period, the government relaxed exchange controls, liberalized interest rates, created new money markets and reformed the Bourse. In contrast to the British Big Bang approach to stock market reform, French policy makers gradually ended the monopoly of the agents de changes giving them six years to adjust to increased competition. The French government also strengthened the authority of the exchange's regulator, the Commission de la Bourse and maintained its own considerable influence over the national financial institutions.

Unlike the state-led French reforms, the German debates over how to strengthen the competitiveness of the national financial service industry incorporated many different interests from the public and private sectors at the national and regional levels. For example, the Ministry of Finance, the Bundesbank and the powerful universal banks advocated a major reorganization of the stock exchanges which would concentrate business in Frankfurt. The regional exchanges, their local industry clients and the Länder governments strongly opposed any stock market reforms for fear that the regional

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<sup>9</sup> Vogel, Steven K. 1996. *Freer Markets, More Rules*. Ithaca: Cornell University Press. The following sketches of financial service reform in the UK, France and Germany draw primarily on Vogel's research

exchanges would be severely weakened. After a great deal of debate, an agreement was finally reached in 1993 to reorganize the exchanges and establish a federal regulatory authority under the Ministry of Finance. As in the telecom industry the German stock market reforms were liberal, but both Federal and regional policy makers retained their strong influence over the financial services market. A promising area for future inquiry would be to explore how liberalization and regulatory reform during the 1980s shaped the development of the national markets for financial services and national actors' responses to the increased internationalization of the sector in the 1990s.

### *Implications*

These comparisons merit further investigation because the evolution of distinct national market dynamics has important implications for policy makers, firms and individuals. My research highlights the power of national policy makers and the impact of their decisions not only on the telecom industry but also on the growth of the internet and new on-line services. Far from being helpless in the face of liberalization, internationalization and technological change, national governments possess significant power to shape the development of the market. Indeed, rather than emerging spontaneously, the national telecom markets were formed by national policy choices and national firms' decisions to enter the market. By protecting national telecom operator from competition through regulation or industrial policy measures, governments may hinder the development of the internet and discourage other industries from investing in on-line services because of the high cost of access and capacity constraints. My analysis also suggests that there are ways in which governments can help promote competition and investment in new technology. For example, in the UK the government used

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and a survey of the business press.

asymmetric regulation to actively promote facilities based competition. To encourage investments in new internet technologies, national governments can play an important role as lead users and bring schools and public administrations on-line. They can also adopt a clear, consistent and flexible approach to regulation that facilitates the convergence of telecoms, broadcasting and computing. From an industry perspective, as telecom operators develop their European strategies, they must be prepared to compete in distinct national markets with different political and competitive environments. Under these conditions joint ventures with local, politically-connected telecom companies or utilities may be critical.

Perhaps most importantly, the development of the internet and on-line services will have a profound effect on how we work, communicate, learn or participate in government. The availability of new innovative service, the choice of service providers and the price of access all influence how people living in a given country will use new information and communication technologies and incorporate them into their daily lives. Universal service regulation and policies for internet in school affect the extent to which the internet and powerful new applications are available to all members of society. As national governments liberalize telecom markets and build the policy framework within which competitive markets develop, it is crucial that they construct a solid platform for new new technologies to flourish. Indeed, if the development of these technologies is affected by national factors and national political decisions, then these decisions must be made with a full awareness of their ramifications in areas far beyond the market for telecommunications.

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