CINZIA DAL ZOTTO (ed.) Growth and Dynamics of Maturing New Media Companies JIBS Research Reports No. 2005-2

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Jönköping International Business School

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Companies that were called "new media" firms a decade ago are now maturing and playing increasingly competitive roles in the media landscape and comprehension of the uses and opportunities presented by these technologies have evolved along with the firms. The changes resulting from the introduction of the technologies, and their uses by media and communication enterprises, today present a host of realistic opportunities to both established and emergent firms.

This book explores developments in the new media firms, their effects on traditional media firms, and emerging issues involving these media. It addresses issues of changes in the media environment, markets, products, and business practices and how media firms have adapted to those changes as the new technology firms have matured and their products have gained consumer acceptance. It explores organizational change in maturing new media companies, challenges of growth in these adolescent firms, changing leadership and managerial needs in growing and maturing firms, and internationalization of small and medium new media firms. The chapters in this volume reveal how they are now creating niches within media and communication activities that are providing them competitive spaces in which to further develop and succeed.

The book is based on papers and discussions at the workshop, "The 'New Economy' Comes of Age: Growth and Dynamics of Maturing New Media Companies" sponsored by the Media Management and Transformation Centre of Jönköping International Business School, 12-13 November 2004. The volume was edited by Cinzia dal Zotto, research manager of and a post-doctoral fellow at the Media Management and Transformation Centre, Europe's premier centre on media business studies.

JÖNKÖPING INTERNATIONAL
BUSINESS SCHOOL
JÖNKÖPING UNIVERSITY

ISSN 1403-0462
ISBN 91-89164- 61-X

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Jönkoping International Business School
P.O. Bos 1026
SE-551 11 Jönköping
Sweden
Tel. + 46 36 15 77 00
E-mail: info@jibs.hj.se
www.jibs.se

Growth and Dynamics of Maturing New Media Companies
JIBS Research Report Series No. 2005-2

ISSN 1403-0462
ISBN 91-89164- 61-X

Printed by ARK-Tryckaren AB, 2005

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Foreword

New media and their related communication systems are no longer "new." They survived the introduction period in the later half of the 1990s and the shakeout at the turn of the twenty-first century; they are now developing, maturing, and playing increasingly competitive roles in the media landscape. Financiers, audiences, advertisers and sponsors, and media firms are gaining an understanding of the uses and opportunities presented by these "new economy" technologies.

This book focuses on developments in new media firms, effects on traditional media firms, and emerging issues involving these media. It contains chapters based on selected papers from the workshop, "The 'New Economy' Comes of Age: Growth and Dynamics of Maturing New Media Companies" sponsored by the Media Management and Transformation Centre of Jönköping International Business School on 12-13 November 2004. The purpose of the workshop was to seek assessments and evaluations of firms in the new economy in order to comprehend their scope and activities, enable discussions of their status and future, explore implications for policy making, and spark new research on issues involved.

The new economy has implications not only for the macro-economy but also for the management, marketing and financing of the companies. Presentations at the workshop focused on questions central to the new economy debate, such as organizational change in maturing new media companies, challenges of growth in adolescent firms, changing leadership and managerial needs in growing and maturing firms, internationalization of small and medium new media firms, investments in new media firms. They explored changes in the new media environment, markets, products, and business practices and how firms have adapted to those changes as they have matured and gained consumer acceptance. The chapters in this volume reveal a great deal about new media firms and technologies and how they are now creating niches within media and communication activities that are providing them competitive spaces in which to further develop and succeed.

The volume was edited by Cinzia dal Zotto, research manager of and a post-doctoral fellow at the Media Management and Transformation Centre.

Prof. Robert G. Picard, Director
Media Management and Transformation Centre

Introduction

What is the New Economy?

Cinzia dal Zotto

The widespread usage of the term "new economy" evokes the impression of a general consensus among the economists using it. However, this term means different things to different people and therefore there is no common definition (Bosworth & Tripplet, 2000). Usually the search for a definition brings to broad descriptions of the character and main qualities of the new economy. In many cases, these descriptions are not more than a general characterization of the macroeconomic performance of the U.S. in the 1990s. According to the Bureau of Economic Analysis the new economy is described as the expansion of the U.S. economy in the 1990s, characterized by its unprecedented length, strong growth in real gross domestic product (GDP) and per capita GDP, higher rates of investment as well as low inflation and unemployment (Fraumeni & Landefeld, 2000). Driving forces of this phenomenon have been identified as the impact of globalization, the intensified international competition and the impact of technological innovation over the last decades which led to a general improvement in long-run productivity growth (Davies, et al., 2000).

Some authors have tried to give a narrow definition to the new economy in order to be able to conduct empirical studies. According to Gordon (2000) the new economy is understood as equivalent to an acceleration in the rate of technical advance in IT in the second half of the 1990 decade, without taking into account its contributions prior to 1995. The new economy is therefore seen as a transformation eradicating the budget deficit, inflation and the business cycle. For Bosworth and Triplett (2000) the new economy embraces IT, namely computers, peripherals, computer software, communications and related equipment. Being the spread of these new technologies evident both on the demand and on the supply side during the 1990s, the IT is seen as an accelerator of the economy's trend rate of output and productivity growth.

From both the broad and the narrow definitions it appears that the new economy resembles a transformation to a "knowledge and idea-based economy" in which innovative ideas and technology are the keys to economic growth. Risk, uncertainty and constant change are described to be the norm in this kind of economy. If the broad definition of new economy limits the time period, it is not clear though why a whole economy should be identified with only one sector or industry. According to these definitions either all the years before 1990 (Davies, et al.,2000) or all sectors outside the new economy are excluded and referred to as "old economy" (Nordhaus, 2000).

The new economy is often referred to as the "E-conomy" (Cohen, et al., 2000). This term points at the fact that the recent economic transformation is driven by the development and diffusion of modern electronics-based information technology. The E-conomy is intended as a structural shift, bringing transformation and disruption, and not primarily as a macroeconomic or cyclical phenomenon. However, it is not about soft macroeconomic landings, smooth growth, permanently rising stock prices, government budget surpluses, or permanently low rates of unemployment, interest and inflation.

What, then, is the new economy about? There are eras when advancing technology and changing organizations transform not just one production sector but the whole economy and the society on which it rests. Such moments are rare. But today we may well be living in the middle of one. Information technology builds tools to manipulate, organize, transmit, and store information in digital form. It amplifies brainpower in a way analogous to that in which the nineteenth century Industrial Revolution's technology of steam engines, metallurgy and giant power tools multiplied muscle power. Currently, not a single sector of the world economy is sheltered from the developments of IT. Greenspan (2000) stated that there is, with few exceptions, little of a truly old economy left. Virtually every part of our economic structure is affected by the newer innovations. However, since technological developments to date have been based on some former inventions, it is really difficult to draw a line that separates "old" from "new". Indeed, the telegraph was the predecessor of the telephone and the microprocessor is a further development of the transistor invented by Shockley in 1947. Only the interconnection of computers via the Internet on an international scale represents a development which can be characterized as "new" because it can only be found in the 1990s. This event has surely marked a line and, by sparking a revolution in information availability, given birth to a new kind of economy (Greenspan, 2000).

According to Jentsch (2001) the new economy is any economy characterized by the following features:

- the economy's information sector contributes more than 25% to the GDP growth rate
- in the economy's business sector, the Internet is adopted as an infrastructure for economic transactions by at least 25% of the businesses
- at least 25% of all households have a computer and access to the Internet

The benchmark of 25% represents a statistical indicator claimed to be large enough to have a significant impact on the economy as a whole (Department of Commerce, 2000). The information sector includes here the industries software, hardware, communication equipment and services (Jentsch, 2001). This technology-centered definition is based on the assumed novelty of large-

scale IT adoption and interconnection. Further, it encompasses quantitative indicators which help to detect and analyze the emergence of the new economy regardless of time and place as well as to compare it to other economies.

The extraordinary build-out of the communications networks that link computers together is almost as remarkable as the explosion in computing power. The result has been that the new economy has emerged faster, diffused more rapidly and more widely throughout the economy than previous technological revolutions (Castells, 1996; Shapiro & Varian,1999). The new economy can though emerge in other countries than the U.S. or Europe within periods other than the 1990-2000 timeframe. At present we are in fact witnessing the impact of the new economy on countries such as China and South Korea.

The New Economy and Economic Growth

The definition described above does not explicitly include the consequences of the technology adoption. The positive development of the U.S. economy in the recent years could be attributed to different factors such as globalization, deregulation, flexible labor markets and an anti-inflationary monetary policy. There is no doubt though that an increasing interconnection and the subsequently increased information availability have altered the growth process of industries. The traditional Exogenous Growth Theory explains economic growth as a result of the accumulation of human capital and technical progress in a world of constant returns to scale and scarce resources. According to the more recent Endogenous Growth Theory (Romer,1986), there are three important elements influencing long term economic growth: externalities, diminishing returns in the production of new knowledge and increasing returns in output production. Companies investing in new knowledge cannot perfectly internalize advances in knowledge such as new research results. Externalities arise when other businesses capture such knowledge spill-overs and use them as a costless factor of production. This means that doubling inputs in research will not necessarily double the amount of new knowledge produced and assimilated and as a consequence knowledge production shows diminishing returns. Further, Romer (1986) assumes increasing returns in the production of consumption goods. Thus it seems that long-term growth is mainly driven by the accumulation of knowledge, which in turn is enhanced by interconnectivity.

As interconnectivity has led to an increased availability of information, knowledge can be easily accumulated. According to Weitzman (1998) the ultimate limit to economic growth is represented by the ability to process the abundance of potentially new ideas into a productive form and not by the ability to generate new ideas. Therefore, economic growth implies the existence of a complete learning process, where knowledge is not only produced but also

assimilated and successfully applied. The key to the successful—and therefore productive—application of knowledge is human inventiveness (Shiller, 2000).

However, if knowledge becomes an increasingly important production factor, then intellectual property rights may influence the market structure more than expected. The right to exclude others from using knowledge may in fact lead to temporary monopolies or to market failure, despite free competition or low market entry barriers (Jentsch, 2001). Furthermore, externalities such as spill-over effects can be seen as imperfect incentives to invest in knowledge production and therefore lead to market failures. Finally, because of increasing returns, some firms—such as those involved in the production of information goods—might devolve into natural monopolies. Production cost structures based on high fixed costs but almost zero marginal costs (Romer, 1990) for each following unit can lead to economies of scale and to potential monopolies.

The above described limits can be at the base of economic downturns. However, since World War II, the U.S. business cycles have changed their appearing: contractions have become shorter, expansions longer, fluctuations in general have become less volatile (Jentsch, 2001). Proponents of the new economy even claim that the U.S. economy is on a steady growth path behind which the main driving factor is represented by IT investments. Apparently the features of these investments enhance the stability of business operations and therefore reduce the volatility of the business cycle. Greenspan (2000) explains that IT investments not only have a capacity-enhancing and cost-cutting effect. On the contrary, being the foundation of the revolution in information availability, they have enhanced learning processes and consequently reduced uncertainty. Market participants are therefore able to react more quickly to changing conditions. As a consequence the whole economy can more easily adapt to external shocks, volatile fluctuations are reduced and contractions as well as recessions are shorter.

The New Economy and the Media

Without media though, IT investments would not have led to such a revolution in information availability and to smoother business cycles. Moreover, although news media present themselves as detached observers of market events, they are themselves an integral part of these events. Significant market events generally occur only if there is similar thinking among large groups of people, and the news media are essential vehicles for the spread of ideas (Shiller, 2000). Not only limits to IT investments but also barriers to media coverage prevent interconnections to be established and potentially break or hinder the emergence of a network based economy such as the new economy. Networks have indeed to reach a critical mass in order to become a source of increasing returns and growth (Cohen, et al., 2000; Economides, 2000): the more users participate in the network the more will follow and the higher the value of the network. Metcalfe's law states that the value of a network is proportional to the

square of the number of nodes on the network. Therefore, a tenfold increase in the size of the network leads to a hundredfold increase in its value (Shapiro & Varian 1999). Further, the value of products in a networked economy depends not so much on scarcity or production costs, but on plentitude. Pricing of such goods is claimed to be reverse: the more, the cheaper despite increasing quality (Kelly, 1997).

Very basic factors such as urbanization are keys to generate population density and make the introduction of IT and media economically feasible. Among the underdeveloped countries the lack of literacy, electricity and telephony hinders interconnectivity and consequently the creation of networks: this is a further critical factor for the emergence of the new economy and therefore for economic development and growth. The blessing of the information revolution will though not automatically accrue to everyone even in the developed countries. Socially weaker citizens in particular are in danger of becoming the pariahs of the modern information society. Their lack of financial resources, knowledge and skills is said to prevent them from exploiting the advantages of ICT developments, so reinforcing their disadvantage and existing forms of inequalities. This can produce a divide between information-poor and information-rich. In a society in which always greater importance is given to information and communication and thus to ICT, the social participation of these groups of people comes under pressure, thereby endangering not only the economy but also democracy (Frissen, 2005).

Policy Implications

A direct policy implication here is that public tasks lie not only in the area of equal access, but also in the field of provision of information itself. Varied, multimedia information provision—which is not guaranteed by the market—and a wide range of communication platforms should be secured in order to allow citizen participation to the economy. If the new networked media such as online newspapers or digital television are a prerogative of the developed countries, in underdeveloped areas traditional print and broadcast media play a determinant role in enhancing the information society and spreading knowledge. The technological infrastructure needed to bridge the digital divide and therefore to drive the old economy towards the new interconnected economy can only be built through knowledge and financial investments. In this perspective the mass media can be considered as truly drivers of growth and should therefore be subsidized by the governments in less developed countries.

Further, in today's context, government policy toward resources needs to focus on basic research and on human resources. Today's high technology is not the work of self-taught tinkers. Clever engineers working in family garages stand on the shoulders of fundamental, formal, largely academic scientists who created the enormous body of research and development on which the E-conomy rests (Cohen, et al., 2000). Basic research creates the next technological

frontiers. Being close to basic research—having a constant flow of personnel back and forth—is a powerful aid to firms seeking to live on the technological frontier.

The growth of the E-conomy requires human expertise and talent to develop, apply, and use new frontier technologies. Everyone needs to know enough about how our modern information and communications technology systems work in order to make effective use of them both at work and at home. Rising differences in wages between those with more formal education and those with less, and between those with more technology-using experience and those with less, are indicators of the magnitude of change and of the potential long-run severity of the problem. This means that government policy should seriously address investments in education in order to eliminate or at least reduce the digital divide.

It is here again the case, as it has always been with technological revolutions, of creative destruction (Schumpeter, 1975): the destruction of particular jobs, professions, specialties, and the emergence of new ones. The people who fill the new jobs are not the people who filled the old ones. Hence the shift to the new economy will not command broad political consent unless government policy is and is seen to be based on the inclusion of everyone in the economic transformation, and the wide diffusion of the benefits. For if the benefits are not broadly understood, broadly seen as accessible, and broadly shared, the durable political coalition to support policies to speed the coming of the new economy will not exist. And the transformation will be stunted and delayed.

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Background, Questions, and Speculations for Tomorrow's Economy

J. Bradford DeLong[1]
A. Michael Froomkin

Two and a quarter centuries ago the Scottish moral philosopher Adam Smith (1776) used a particular metaphor to describe the competitive market system, a metaphor which still resonates today. He saw the competitive market as a system in which:

> *every individual...endeavours as much as he can...to direct... industry so that its produce may be of the greatest value....neither intend[ing] to promote the public interest, nor know[ing] how much he is promoting it....He intends only his own gain, and he is in this, as in many other cases, led by an invisible hand to promote an end that was no part of his intention....By pursuing his own interest he frequently promotes that of society more effectually than when he really intends to promote it" (Smith, 1776).*

Adam Smith's claim back in 1776 that the market system promoted the general good was new. Today it is one of the most frequently-heard commonplaces. For Adam Smith's praise of the market as a social mechanism for regulating the economy was the opening shot of a grand campaign to reform how politicians and governments looked at the economy.

The campaign waged by Adam Smith and his successors was completely successful. The past two centuries have seen his doctrines woven into the fabric of how our society works. It is hard to even begin to think about our society without basing one's thought to some degree on Adam Smith. And the governments that have followed the path Adam Smith laid down today preside over economies that are more materially prosperous and technologically powerful than ever before seen (Maddison, 1994).

Belief in free trade, an aversion to price controls, freedom of occupation, freedom of domicile, freedom of enterprise, and the other corollaries of belief in Smith's invisible hand have today become the background assumptions for thought about the relationship between the government and the economy. A

[1] DeLong would like to thank the National Science Foundation, the Alfred P. Sloan Foundation, and the Institute for Business and Economic Research of the University of California for financial support. We both would like to thank Caroline Bradley, Joseph Froomkin, Hal Varian, Ronald P. Loui, Paul Romer, Andrei Shleifer, and Lawrence H. Summers for helpful discussions.

free-market system, economists claim, and most participants in capitalism believe, generates a level of total economic product that is as high as possible and is certainly higher than under any alternative system that any branch of humanity has conceived and attempted to implement (Debreu, 1957). It is even possible to prove the "efficiency" of a competitive market, albeit under restrictive technical assumptions.

The lesson usually drawn from this economic success story is laissez-faire, laissez-passer: in the overwhelming majority of cases the best thing the government can do for the economy is simply to leave it alone. Define property rights, set up honest courts, perhaps rearrange the distribution of income, impose minor taxes and subsidies to compensate for well-defined and narrowly-specified "market failures", but otherwise the economic role of the government is to disappear.

The main argument for a free competitive market system is the dual role played by prices. On the one hand, prices serve to ration demand: anyone unwilling to pay the market price because he or she would rather do other things with his or her (not unlimited) money does not get the good (or service). On the other hand, price serves to elicit production: any organization that can make a good (or provide a service) for less than its market price has a powerful financial incentive to do so. Thus what is produced goes to those who value it the most. What is produced is made by the organizations that can make it the cheapest. And what is produced is whatever the ultimate user's value the most.

You can criticize the market system because it undermines the values of community and solidarity. You can criticize the market system because it is unfair, for it gives good things to those who have control over whatever resources turn out to be most scarce as society solves its production allocation problem, not to those who have any moral right to good things. But – at least under the conditions economists have for two and a quarter centuries first implicitly and more recently explicitly assumed – you cannot criticize the market system for being unproductive.

Adam Smith's case for the invisible hand so briefly summarized above will be familiar to almost all readers: it is one of the foundation-stones of our civilization's social thought. Our purpose in this chapter is to shake these foundations, or at least to make readers aware that the changes in technology now going on as a result of the revolutions in data processing and data communications may shake these foundations. Unexpressed but implicit in Adam Smith's argument for the efficiency of the market system are assumptions about the nature of goods and services and the process of exchange, assumptions that fit reality less well today than they did back in Adam Smith's day.

Moreover, these implicit underlying assumptions are likely to fit the "new economy" of the future even less well than they fit the economy of today.

The Structure of this Chapter

Thus the next section of this chapter deconstructs Adam Smith's case for the market system. It points out three assumptions about production and distribution technologies necessary if the invisible hand is to work as Adam Smith claimed it did. We point out that these assumptions are being undermined more and more by the revolutions in data processing and data communications currently ongoing.

In the subsequent section we take a look at things happening on the frontiers of electronic commerce and in the developing markets for information. Our hope is that what is now going on at the frontiers of electronic commerce may contain some clues to processes that will be more general in the future.

Our final section does not answer all the questions we raise. We are not prophets, after all. Thus our final section raises still more questions, for the most we can begin to do today is to organize our concerns. By looking at the behavior of people in high-tech commerce—people for whom the abstract doctrines and theories that we present have the concrete reality of determining if they get paid—we can make some guesses about what the next economics and the next set of sensible policies might look like, if indeed there is going to be a genuinely new economy and thus a genuinely next economics.

Moreover, we can warn against some pitfalls in the hope that such warnings might make things better rather than worse.

"Technological" Prerequisites of the Market Economy

The ongoing revolution in data processing and data communications technology may well be starting to undermine those basic features of property and exchange that make the invisible hand a powerful social mechanism for organizing production and distribution. The case for the market system has always rested on three implicit pillars, three features of the way that property rights and exchange worked.

Call the first feature excludability: the ability of sellers to force consumers to become buyers, and thus to pay for whatever goods and services they use. Call the second feature rivalry: a structure of costs in which two cannot partake as cheaply as one, in which producing enough for two million people to use will cost at least twice as many of society's resources as producing enough for one million people to use. Call the third transparency: the ability of individuals to see clearly what they need and what is for sale, so that they truly know just what it is that they wish to buy.

All three of these pillars fit the economy of Adam Smith's day relatively well. The prevalence of craft as opposed to mass production guaranteed that two could only be made at twice the cost of one. The fact that most goods and services were valued principally for their (scarce) physical form meant that two

could not use one good. Thus rivalry was built into the structure of material life that underpinned the economy of production and exchange.

Excludability was less a matter of nature and more a matter of culture, but certainly by Smith's day large-scale theft and pillage was more the exception than the rule: the courts and the law were there to give property owners the power to restrict the set of those who could utilize their property to those who had paid for the privilege.

Last, the slow pace and low level of technology meant that the purpose and quality of most goods and services were transparent: what you saw was pretty much what you got.

All three of these pillars fit much of today's economy pretty well too, although the fit for the telecommunications and information-processing industries is less satisfactory. But they will fit tomorrow's economy less well than today's. And there is every indication that they will fit the twenty-first century economy relatively poorly (MacKie-Mason and Varian, 1995).

As we look at developments along the leading technological edge of the economy, we can see that considerations that used to be second-order "externalities" that served as corrections growing in strength to possibly become first-order phenomena. And we can see the invisible hand of the competitive market beginning to work less and less well in an increasing number of areas.

Excludability

In the information-based sectors of the next economy, the owners of goods and services—call them "commodities" for short—will find that they are no longer able to easily and cheaply exclude others from using or enjoying the commodity. The carrot-and-stick which had enabled owners of property to extract value from those who wanted to use it was always that if you paid you got to make use of it, and if you did not pay you did not get to make use of it.

But digital data is cheap and easy to copy. Methods do exist to make copying difficult, time-consuming, and dangerous to the freedom and wealth of the copier, but these methods add expense and complexity. "Key disk" methods of copy protection for programs vanished in the late 1980s as it became clear that the burdens they imposed on legitimate owners and purchasers were annoying enough to cause buyers to vote-with-their-feet for alternative products. Identification-and-password restrictions on access to online information are only as powerful as users' concern for information providers' intellectual property rights, which is surely not as powerful as the information providers' concern.

In a world of clever hackers, these methods are also unreliable. The methods used to protect Digital Video Discs against casual copying are no longer secure. Without excludability, the relationship between producer and consumer becomes much more akin to a gift-exchange than a purchase-and-sale relationship (Akerlof, 1985). The appropriate paradigm then shifts in the direction of a fund-raising drive for a National Public Radio station. When

commodities are not excludable then people simply help themselves. If the user feels like it he or she may make a "pledge" to support the producer. The user sends money to the producer not because it is the only way to gain the power to utilize the product, but out of gratitude and for the sake of reciprocity.

This reciprocity-driven revenue stream may well be large enough that producers cover their costs and earn a healthy profit. Reciprocity is a basic mode of human behavior. People in the large do feel a moral obligation to tip cabdrivers and waiters. People do contribute to National Public Radio. But without excludability the belief that the market economy produces the optimal quantity of any commodity is hard to justify. Other forms of provision—public support funded by taxes that are not voluntary, for example—that had fatal disadvantages vis-a-vis the competitive market when excludability reigned may well deserve reexamination.

We can get a glimpse of how the absence of excludability can warp a market and an industry by taking a brief look at the history of network television. During its three-channel heyday in the 1960s and 1970s, North American network television was available to anyone with an antenna and a receiver: broadcasters lacked the means of preventing the public from getting the signals for free. Free access was, however, accompanied by scarce bandwidth, and by government allocation of the scarce bandwidth to producers.

The absence of excludability for broadcast television did not destroy the television broadcasting industry. Broadcasters couldn't charge for what they were truly producing, but broadcasters worked out that they could charge for something else: the attention of the program-watching consumers during commercials. Rather than paying money directly, the customers of the broadcast industry merely had to endure the commercials (or get up and leave the room; or channel-surf) if they wanted to see the show.

This "attention economy" solution prevented the market for broadcast programs from collapsing: it allowed broadcasters to charge someone for something, to charge advertisers for eyeballs rather than viewers for programs. But it left its imprint on the industry. Charging-for-advertising does not lead to the same invisible hand guarantee of productive optimum as does charging for product. In the case of network television, audience attention to advertisements was more-or-less unconnected with audience involvement in the program.

This created a bias toward lowest-common-denominator programming. Consider two programs, one of which will fascinate 500,000 people, and the other of which 30 million people will watch as slightly preferable to watching their ceiling. The first might well be better for social welfare: the 500,000 with a high willingness-to-pay might well, if there was a way to charge them, collectively outbid the 30 million apathetic couch potatoes for the use of scarce bandwidth to broadcast their preferred program. Thus a network able to collect revenues from interested viewers would broadcast the first program, seeking the applause (and the money) of the dedicated and forgoing the eye-glazed semi-attention of the larger audience.

But this competitive process breaks down when the network obtains revenue by selling commercials to advertisers. The network can offer advertisers either 1,000,000 or 60 million eyeballs. How influenced the viewers will be by the commercials depends relatively little on how much they like the program. As a result, charging-for-advertising gives every incentive to broadcast what a mass audience would tolerate. It gives no incentive to broadcast what a niche audience would love.

As bandwidth becomes cheaper, these problems become less important: one particular niche program may well be worth broadcasting when the mass audience has become sufficiently fragmented by the viewability of multiple clones of bland programming. Until then, however, expensive bandwidth combined with the absence of excludability meant that broadcasting revenues depended on the viewer numbers rather than the intensity of demand. Non-excludability helped ensure that broadcast programming would be "a vast wasteland" (Minow & LaMay, 1985).

In the absence of excludability industries today and tomorrow are likely to fall prey to analogous distortions. Producers' revenue streams—wherever they come from—will be only tangentially related to the intensity of user demand. Thus the flow of money through the market will not serve its primary purpose of registering the utility to users of the commodity being produced. There is no reason to think ex ante that the commodities that generate the most attractive revenue streams paid by advertisers or others ancillary will be the commodities that ultimate consumers would wish to see produced.

Rivalry

In the information-based sectors of the next economy the use or enjoyment of the information-based commodity will no longer necessarily involve rivalry. With most tangible goods, if Alice is using a particular good, Bob cannot be. Charging the ultimate consumer the good's cost of production or the free market price provides the producer with an ample reward for his or her effort. It also leads to the appropriate level of production: social surplus (measured in money) is not maximized by providing the good to anyone whose final demand for a commodity is too weak to wish to pay the cost for it that a competitive market would require.

But if goods are non-rival—if two can consume as cheaply as one—then charging a per-unit price to users artificially restricts distribution: to truly maximize social welfare you need a system that supplies everyone whose willingness to pay for the good is greater than the marginal cost of producing another copy. And if the marginal cost of reproduction of a digital good is near-zero, that means almost everyone should have it for almost free. However, charging price equal to marginal cost almost surely leaves the producer bankrupt, with little incentive to maintain the product except the hope of maintenance fees, and no incentive whatsoever to make another one except that warm fuzzy feeling one gets from impoverishing oneself for the general good.

Thus a dilemma: if the price of a digital good is above the marginal cost of making an extra copy, some people who truly ought—in the best of all possible worlds—to be using it do not get to have it, and the system of exchange that we have developed is getting in the way of a certain degree of economic prosperity. But if price is not above the marginal cost of making an extra copy of a non-rival good, the producer will not get paid enough to cover costs. Without non-financial incentives, all but the most masochistic producer will get out the business of production.

More important, perhaps, is that the existence of large numbers of important and valuable goods that are non-rival casts the value of competition itself into doubt. Competition has been the standard way of keeping individual producers from exercising power over consumers: if you don't like the terms the producer is offering, then you can just go down the street. But this use of private economic power to check private power may come at an expensive cost if competitors spend their time duplicating one another's efforts and attempting to slow down technological development in the interest of obtaining a compatibility advantage, or creating a compatibility or usability disadvantage for the other guy.

One traditional answer to this problem—now in total disfavor—was to set up a government regulatory commission to control the "natural monopoly". The commission would set prices, and do the best it could to simulate a socially optimum level of production. On the eve of World War I when American Telephone and Telegraph—under the leadership of its visionary CEO Theodore N. Vail—began its drive for universal coverage, a rapid political consensus formed both in Washington and within AT&T that the right structural form for the telephone industry was a privately-owned publicly-regulated national monopoly.

While it may have seemed like the perfect answer in the Progressive era, in this more cynical age commentators have come to believe that regulatory commissions of this sort almost inevitably become "captured" by the industries they are supposed to regulate. Often this is because the natural career path for analysts and commissioners involves someday going to work for the regulated industry in order to leverage expertise in the regulatory process; sometimes it is because no one outside the regulated industry has anywhere near the same financial interest in manipulating the rules, or lobbying to have them adjusted. The only effective way a regulatory agency has to gauge what is possible is to examine how other firms in other regions are doing. But such "yardstick" competition proposals—judge how this natural monopoly is doing by comparing it to other analogous organizations—are notoriously hard to implement (Shleifer, 1986).

A good economic market is characterized by competition to limit the exercise of private economic power, by price equal to marginal cost, by returns to investors and workers corresponding to the social value added of the industry, and by appropriate incentives for innovation and new product

development. These seem impossible to achieve all at once in markets for non-rival goods and digital goods are certainly non-rival.

Transparency

In many information-based sectors of the next economy the purchase of a good will no longer be transparent. The invisible hand assumed that purchasers know what it is that they want and what they are buying so that they can effectively take advantage of competition and comparison-shop. If purchasers need first to figure out what they want and what they are buying, there is no good reason to presume that their willingness to pay corresponds to its true value to them.

Why is transparency at risk? Because much of the value-added in the data-processing and data-communications industries today comes from complicated and evolving systems of information provision. Adam Smith's pinmakers sold a good that was small, fungible, low-maintenance and easily understood. Alice could buy her pins from Gerald today, and from Henry tomorrow. But today's purchaser of, say, a cable modem connection to the internet from AT&T, is purchasing a bundle of present goods and future services, and is making a down payment on the establishment of a long-term relationship with AT&T. Once the relationship is established, both buyer and seller find themselves in different positions. Adam Smith's images are less persuasive in the context of services—especially bespoke services which require deep knowledge of the customer's wants and situation (and of the maker's capabilities)—which are not, by their nature fungible or easily comparable.

When Alice shops for a software suite, she not only wants to know about its current functionality—something notoriously difficult to figure out until one has had days or weeks of hands-on experience—but she also needs to have some idea of the likely support that the manufacturer will provide. Is the line busy at all hours? Is it a toll call? Do the operators have a clue? Will next year's corporate downsizing lead to longer holds on support calls?

Worse, what Alice really needs to know cannot be measured at all before she is committed: learning how to use a software package is an investment she would prefer not to repeat. Since operating systems change version numbers frequently, and interoperability needs changes even more often, Alice needs to have a prediction about the likely upgrade path for her suite. This, however, turns on unknowable and barely guessable factors: the health of the corporation, the creativity of the software team, the corporate relationships between the suite seller and other companies.

Some of the things Alice wants to know, such as whether the suite works and works quickly enough on her computer, are potentially measurable at least —although one rarely finds a consumer capable of measuring them before purchase, or a marketing system designed to accommodate such a need. You buy the shrink wrapped box at a store, take it home, unwrap the box and find that the program is incompatible with your hardware, your operating system, or

one of the six programs you bought to cure defects in the hardware or the operating system.

Worse still, the producer of a software product has every incentive to attempt to "lock in" as many customers as possible. Operating system revisions that break old software versions require upgrades. And a producer has an attractive and inelastic revenue source to the extent that "lock in" makes switching to an alternative painful. While consumers prefer the ability to comparison-shop and to switch easily to another product, producers fear this ability and have incentives to perform subtle tweaks to their programs to make it difficult to do so.

The Economics of Market Failure

That the absence of excludability, rivalry, or transparency is bad for the functioning invisible hand is not news (Tirole, 1988). The analysis of failure of transparency has made up an entire subfield of economics for decades: "imperfect information." Non-rivalry has been the basis of the theory of government programs and public goods, as well as of natural monopolies: the solution has been to try to find a regulatory regime will mimic the decisions that the competitive market ought to make, or to accept that the "second-best" public provision of the good by the government is the best that can be done.

Analysis of the impact of the lack of excludability is the core of the economic analysis of research and development. It has led to the conclusion that the best course is to try to work around non-excludability by mimicking what a well-functioning market system would have done. Use the law to expand "property," or use tax-and-subsidy schemes to promote actions with broad benefits.

But the focus of analysis has traditionally been on overcoming "frictions": how can we make this situation where the requirements of laissez faire fail to hold into a situation in which the invisible hand works tolerably well? As long as it works well throughout most of the economy, this is a very sensible analytical and policy strategy. A limited number of government programs and legal doctrines will be needed to closely mimic what the invisible hand would do if it could function properly in a few distinct areas of the economy (like the regional natural monopolies implicit in the turn-of-the-twentieth-century railroad, or in government subsidies basic research).

Out on the Cybernetic Frontier

But what happens when the friction becomes the machine? What will happen in the future should problems of non-excludability, of non-rivalry, of non-transparency come to apply to a large range of the economy? What happens should they come to occupy as central a place in business decision-making as inventory control or production operations management do today? In the

natural sciences, perturbation-theory approaches break down when the deviations of initial conditions from those necessary for the simple solution become large. Does something similar happen in political economy? Is examining how the market system handles a few small episodes of "market failure" a good guide toward how it will handle many large ones?

We do not know. But we do want to take a first step toward discerning what new theories of the new markets might look like should new visions turn out to be necessary (or should old visions need to be adjusted). The natural place to look is to examine how enterprises and entrepreneurs are reacting today to the coming of non-excludability, non-rivalry, and non-transparency on the electronic frontier. The hope is that experience along the frontiers of electronic commerce will serve as a good guide to what pieces of the theory are likely to be most important, and will suggest areas in which further development might have a high rate of return.

The Market for Software (Shareware, Public Betas and More)

We noted above that the market for modern, complex products is anything but transparent. While one can think of services, such as medicine, which are particularly opaque to the buyer, today it is difficult to imagine a more opaque product than software. Indeed, when one considers the increasing opacity of products in the context of the growing importance of services to the economy, it suggests that transparency will become a particularly important issue in the next economy.

Consumers' failure to acquire full information about the software they buy certainly demonstrates that acquiring the information must be expensive. In response to this cost, social institutions have begun to spring up to get around the shrink-wrap dilemma. The first was so-called shareware: you download the program, if you like the program you send its author some money, and maybe in return you get a manual, access to support, or an upgraded version.

The benefit to try-before-you-buy is precisely that it makes the process more transparent. The cost is that try-before-you-buy often turns out to be try-use-and-don't-pay.

The next stage beyond shareware has been the evolution of the institution of the "public beta." This public beta is a time-limited (or bug-ridden, or otherwise restricted) version of the product: users can investigate the properties of the public beta version to figure out if the product is worthwhile. But to get the permanent (or the less-bug-ridden) version, they have to pay.

The developing free-public-beta industry is a way of dealing with the problem of lack of transparency. It is a relatively benign development, in the sense that it involves competition through distribution of lesser versions of the ultimate product. An alternative would be (say) the strategy of constructing barriers to compatibility: the famous examples in the computer industry come from the 1970s when the Digital Equipment Corporation made non-standard cable connectors; from the mid-1980s when IBM attempted to appropriate the

entire PC industry through the PS/2 line; and from the late 1980s when Apple Computers used a partly ROM-based operating system to exclude clones.

Fortunately for consumers, these alternative strategies proved (in the latter two cases at least) to be catastrophic failures for the companies pursuing them. Perhaps the main reason that the free-public-beta strategy is now dominant is this catastrophic failure of strategies of non-compatibility, even though they did come close to success.

A fourth, increasingly important, solution to the transparency problem is Open Source software. Open Source solves the software opacity problem with total transparency: the source code itself is available to all for examination and re-use. Open Source programs can be sold, but whenever a right to use a program is conferred, it brings with it the additional rights to inspect and alter the software, and to convey the altered program to others.

In the "Copyleft license," for example, anyone may modify and re-use the code, provided that they comply with the conditions in the original license and impose similar conditions of openness and re-usability on all subsequent users of the code. License terms do vary. This variation itself is a source of potential opacity. However, it is easy to envision a world in which Open Source software plays an increasingly-large role.

Open Sources' vulnerability (and perhaps also its strength) is that it is, by design, only minimally excludible. Without excludability, it is harder to get paid for your work. Traditional economic thinking suggests that all other things being equal, people will tend to concentrate their efforts on things that get them paid. And when, as in software markets, the chance to produce a product that dominates a single category holds out the prospect of enormous payment (think "Windows"), one might expect that effort to be greater still.

Essentially volunteer software development would seem particularly vulnerable to the tragedy of the commons. Open Source has, however, evolved a number of strategies that at least ameliorate and may even overcome this problem. Open Source authors gain status by writing code. Not only do they gain kudos, but the work can be used as a way to gain marketable reputation. Writing Open Source code that becomes widely used and accepted is serves as a virtual business card and helps overcome the lack of transparency in the market for high-level software engineers.

The absence of the prospect of an enormous payout may retard the development of new features in large, collaborative, open-source projects. It may also reduce the richness of the feature set. However, since most people apparently use a fairly small subset of the features provided by major packages, this may not be a major problem. Furthermore, open source may make proprietary designer add-ons both technically feasible and economically rational.

In open source the revenues cannot come from traditional intellectual property rights alone. One must provide some sort of other value, be it help

desk, easy installation, or extra features, in order to be paid. Moreover, there remains the danger that one may not be paid at all.
Nevertheless, open source already has proven itself to be viable in important markets: the World Wide Web as we know it exists because Tim Berners-Lee Open-Sourced html and http.

Of Shop-bots, Online Auctions, and Meta-Sites

Predictions abound as to how software will use case- and rule-based thinking to do your shopping for you, advise you on how to spend your leisure time, and in general organize your life for you. But that day is still far in the future[2]. So far, we have only the early generations of the knowledge-scavenging virtual robot and the automated comparison shopper. Already, however, we can discern some trends, and identify places where legal rules are likely to shape micro-economic outcomes. The interaction between the law and the market has, as one would expect, distributional consequences. More surprisingly, perhaps, it also has potential implications for economic efficiency.

Shop-Bots

BargainFinder was one of the first Internet-based shopping agents[3]. In its first incarnation, back in 1997, it did just one thing. Even then it did it too well for some. Now that Bargain Finder and other intelligent shopping agents have spread into a wide range of markets, a virtual war over access to and control of price information is raging in the online marketplace. Thus one has to ask: does the price come at a price?

In the initial version of BargainFinder, and to this day, the user enters the details of a music compact disk she might like to purchase. BargainFinder interrogated several online music stores that might offer to sell them. It then reports back the prices in a tidy table that makes comparison shopping easy. Initially, the system was not completely transparent: it was not always possible to discern the vendor's shipping charges without visiting the vendor's web site. But as BargainFinder's inventors said, it was "only an experiment."

Today, it's no longer an experiment. Shipping and handling is included as a separate and visible charge. The output is a handsome table which can be sorted by price, by speed of delivery, or by merchant. It can be further customized to take account of shipping costs by zip code, and results can be sorted by price or speed of delivery. While the user sees the names of the firms whose prices are listed, it's a short list, and there is no way to know what other firms might have been queried.

Other, newer, shopping agents take a more aggressive approach. R-U-Sure, available at http://rusure.com, installs an application on the desktop that

[2] A useful corrective to some of the hype is Kathyrn Heilmann et al., Intelligent agents: A technology and business application analysis, http://haas.berkeley.edu/~heilmann/agents/#I
[3] http://bf.cstar.ac.com/bf/.http:bf/

monitors the user's web browsing. Whenever the user interacts with an e-commerce site that R-U-Sure recognizes, it swings into action, and a little box pops up with a wooshing noise. It displays the queries it is sending to competing merchants' web stores to see if they have a better price, and reports on the winner.

Competitor clickthebutton, http://www.clickthebutton.com, installs an icon in the taskbar, but only pops up when clicked. The company provides a full and impressively lengthy list of the sites it is capable of querying on the shopper's behalf.

Bidding Services

Price competition is also fostered by bidding services and auctions. Bidding services such as http://www.priceline.com (hotels, air tickets) and http://www.nextag.com (consumer goods and electronics) invite customers to send a price they would be willing to pay for a commodity service or good. The price competition is, however, constrained. There is no obvious way for consumers to learn what deals others have been able to secure, and the bidding services appear designed to discourage experimentation designed to find out the market-clearing price.

Priceline requires the consumer to commit to pay if his offer is accepted; Nextag does not, but tracks the user's behavior with a "reputation" number that goes up when a merchant's acceptance of a bid results in a purchase and goes down when an accepted bid does not lead to a purchase. Unlike Priceline, however, Nextag contemplates multi-round negotiations: "sellers" it warns, "will be more likely to respond to your requests if you have a high rating."

At first glance, a highly variegated good like a college education would seem to resist any effort at a bidding process. Nevertheless ecollegebid.org, http://www.ecollegebid.org/, has a web site inviting prospective college students to state what they are willing to pay and then offers to match it with a "college's willingness to offer tuition discounts." Although the list of participating colleges is not published, or even shared with competing colleges, Executive Director Tedd Kelly states that 6 colleges are set to participate and negotiations are under way with more than 15 others. In its first five weeks 508 students placed ecollegebids. Once a college meets a price, the student is asked, but not required, to reply within 30 days and to submit an application that the college retains the option of rejecting.

Auction Sites

Auction sites provide a different type of price competition, and a different interface with shopping bots. Users can either place each of their bids manually, or they can set up a bidding pot to place their bids for them. Ebay, for example, encourages bidders to not only place an initial bid but also to set up "proxy bidding" in which any competing bid immediately will be met with a response

up to the user's maximum price. Since Ebay gets a commission based in part on the final sale price, it gains whenever proxy bidding pushes up the price.

Perhaps the fastest growing segment of the online auction market is aimed at business-to-business transactions. An example is Freemarkets, a provider of global supply management solutions, which has been growing very fast and in 2004 has been acquired by Ariba, an enterprise spend management solution provider.

Meta Auction Sites

There is a significant number of competing consumer auction sites in operation. The profusion of auctions has created a demand for meta-sites that provide information about the goods on offer on multiple online auctions. Examples of meta-sites include http://www.auctionwatch.com/ and http://www.auctionwatchers.com/.

Auctionwatch, like BargainFinder before it, has become too successful for some. E-bay initially requested meta-sites no to list their auctions. When Auctionwatch failed to comply, E-bay} threatened auctionwatch.com with legal action, claiming that Auctionwatch's "Universal Search" function, which directs users to auctions on E-bay and competing services (Yahoo, Amazon.com, MSN, Bidstream, and Ruby Lane) is an "unauthorized intrusion" that places an unnecessary load on E-bay's servers, violates E-bay's intellectual property rights, and misleads users by not returning the full results of some searches.

The claim that E-bay's auction prices or the details of the sellers' offers to sell are protected by copyright, trade secret or other intellectual property law is bogus. However, there are proposals in Congress to change the law in a way that might make the claim more plausible in the future. Other hitherto untested legal theories might, however, prove more plausible. A claim that meta-sites were imposing somehow damaging E-bay by overloading its servers, or a claim based on some kind of trespass might find more support.

Whether meta-auction sites do burden searchees' servers is itself a difficult factual issue. To the extent that multiple people not interested in bidding see the data on the meta-site, the load on E-bay is reduced. The current law is probably in the meta-sites favor. But there is uncertainty. And this uncertainty is compounded by the possibility of legislation.

Efficiency?

It is particularly appropriate to ask what the economically-efficient solution might be at a time when the law is in some flux. Most economists, be they Adam Smithian classicists, neo-classical Austrians, or more modern economics of information mavens, would at first thought instinctively agree with the proposition that a vendor in a competitive market selling a standardized product—for one Tiger Lily CD is as good as another—would want customers

to know as much as possible about what the vendor offers for sale, and the prices at which the goods are available.

The reason for this near-consensus is that in a competitive market every sale at the offer price should be welcome: all are made at a markup over marginal cost. Thus all on-line CD retailers ought to have wanted to be listed by BargainFinder, if only because every sale that went elsewhere when they had the lowest price was lost profit.

But not so.

A significant fraction of the merchants regularly visited by BargainFinder were less than ecstatic. They retaliated by blocking the agent's access to their otherwise publicly-available data. As of March 1997, one third of the merchants targeted by the BargainFinder locked out its queries[4]. One, CDNow, did so for frankly competitive reasons. The other two said that the costs of large numbers of "hobbyist" queries were too great for them. Morover E-bay, the best-known online auction site, had begun to walk down the trail blazed by BargainFinder by blocking Auctionwatch's access to Ebay's data.

One possible explanation for the divergence between the economic theorist's prediction that every seller should want to be listed by BargainFinder or Auctionwatch and the apparent outcome is the price-gouging story. In this story, stores blocking comparison sites tend to charge higher than normal prices because they are able to take advantage of consumer ignorance of cheaper alternatives. The stores are gouging buyers by taking advantage of relatively high costs of search.

Our utterly unscientific web-browsing supports the hypothesis that consumers have yet to figure out how to bring their search costs down – R-U-Sure may need a lot more publicity. Prices are in flux, and do not appear to be behaving the way Adam Smith would predict. Random browsing among various delivery channels reveals wide price fluctuations, peaking at 40% on one occasion for consumer electronics items under $200. In this case BargainFinder and its successors would indeed be valuable developments. They will make markets more efficient and lower prices (Cane, 1997).

Another possibility is the "kindly service" story. Perhaps stores blocking BargainFinder, R-U-Sure, or meta-sites tend to charge higher than normal prices because they provide additional service or convenience. If commerce

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[4] In January 1997, BargainFinder shopped at nine stores: CD Universe, CDnow!, NetMarket, and GEMM, IMM, Music Connection, Tower Records, CD Land, CDworld, and Emusic. A sample search for the Beatles White Album in January 1997 produced this output:
I couldn't find it at Emusic. You may want to try browsing there yourself. CD Universe is not responding. You may want to try browsing there yourself. $24.98 (new) GEMM (Broker service for independent sellers; many used CDs, imports, etc.) I couldn't find it at CDworld. You may want to try browsing there yourself. $24.76 Music Connection (Shipping from $ 3.25, free for 9 or more. 20 day returns.) CDnow is blocking out our agents. You may want to try browsing there yourself. NetMarket is blocking out our agents. You may want to try browsing there yourself. CDLand was blocking out our agents, but decided not to. You'll see their prices here soon.IMM did not respond. You may want to try browsing there yourself.

becomes increasingly electronic and impersonal (or if "personal" comes to mean "filtered through fiendishly clever software agents"), this sort of humanized attention will become increasingly expensive. To the extent that this additional service or convenience can be provided automatically, things are less clear.

In a sometimes forgotten classic, The Joyless Economy, Tibor Scitovsky noted that the advent of mass production of furniture seemed to cause the price of hand-carved chairs to increase, even as the demand for them shrank (Scitovsky, 1976). As consumers switched to less costly (and less carefully made, one size-fits-all) mass-produced furniture, carvers became scarce and business for remaining carvers became scarcer. Soon only the rich could engage their services.

If the kindly service story is right, the rise of the commodity market creates a risk of a possible decline in service-intensive or higher-quality goods. Mass tastes will be satisfied more cheaply; yet specialty tastes will become more of an expensive luxury[5]. On the other hand, the rise of ShopBots such as BargainFinder or R-U-Sure offers an opportunity for consumers to aggregate their preferences on worldwide scale. Indeed, Mercata, http://www.mercata.com/, provides a service by which consumers can group together to put in a group buy for a product. The larger the number of units, the lower the price, although it is not clear that the even the resulting price is always lower than might be found by determined web-browsing. Thus the transactions costs associated with both aggregation of identical but disparate preferences, and the communication and satisfaction of individualized preferences should be going down. As it becomes increasingly easy for consumers to communicate their individualized preferences to manufacturers and suppliers, and increasingly easy to tailor goods to individual tastes – be it a CD that only has the tracks you like, customized blue jeans, or a car manufactured just-in-time to your specifications – personalized goods may become the norm, putting the "joy" back into the economy and replacing the era of mass production with an era of mass customization.

Some signs of this were visible even before the information revolution: lower costs of customization have already undermined one of Scitovsky's examples, as fresh-baked bread makes its comeback at many supermarkets and specialty stores. And Alfred P. Sloan created General Motors and the automobile industry of the post-World War II era by piling different body styles, colors, and option packages on top of the same Chevy drive train.

In either the "price gouging" or "kindly service" stories, the advent of services such as BargainFinder and R-U-Sure presents retailers of many goods with a dilemma: If they join in, they contribute towards turning the market for CDs, books, consumer electronics and other similar goods into a commodity market with competition only on price. If they act "selflessly" and stay out, in

[5] On the other hand, retailing, stock control, billing, auditing and shipping are different from, e.g. manufacturing, so in principle there might still be a role for a middleperson. Amazon.com, a leading Internet bookseller has almost no books in stock.

order to try to degrade the utility of shop-bots and meta-sites (and preserve their higher average markup), they must hope that their competitors will understand their long-run self-interest in the same way (Axelrod, 1984).

But overt communication in which all sellers agreed to block BargainFinder would, of course, violate the Sherman Act. And without a means of retaliation to "punish" players who do not pursue the collusive long-run strategy of blocking BargainFinder, the collapse of the market into a commodity market with only price competition, and with little provided in the way of ancillary shopping services, appears likely.

When we wrote the first draft of this essay, we noted that if CD retailers were trying to undermine BargainFinder by staying away, their strategy appeared to be failing. Some CD retailers who initially blocked BargainFinder then unblocked it, while others were clamoring to join. Since then, the rise of a new generation of meta-sites and alternate means of creating price competition makes the question somewhat moot. The technological arms race pitting meta-sites and shop-bots against merchants will continue, but the advantage seems to be with the attackers, if only due to their numbers.

Whether or not this is an occasion for joy depends on which explanation above is closer to the truth. The growth of the bookstore chain put the local bookshop out of business, just as the growth of supermarkets killed the corner grocer. Not everyone considers this trend to be a victory, despite the lower prices. A human element has been lost, and a "personal service" element that may have led to a better fit between purchaser and purchase has been lost as well.

So far, the discussion has operated on the basis of the assumption that merchants would have an incentive to block comparison shopping services if they charge higher than normal prices. Strangely, some merchants may have had an incentive to block it if they charged lower than normal prices. As we all know, merchants sometimes advertise a "loss leader," and offer to sell a particular good at an unprofitable price. Merchants do this in order to lure consumers into the store where they either may be attracted to more profitable versions of the same good (leading, in the extreme case, to "bait and switch"), or in the hope that the consumer will spy other, more profitable, goods to round out the market basket.

You can explain this merchant behavior in different ways, either by talking about the economics of information, locational utility, myopic consumers generalizing incorrectly on the basis of a small number of real bargains, or about temporary monopolies caused by the consumer's presence in this store as opposed to another store far away.

It may be that merchants blocking BargainFinder did not want consumers to be able to exploit their loss-leaders without having to be exposed to the other goods offered simultaneously. Without this exposure the loss-leaders would not lure buyers to other, higher-profit, items, but would simply be losses. The merchant's ability to monopolize the consumer's attention for a period may be

the essence of modern retailing; the reaction to BargainFinder, at least, suggests that this is what merchants believe.

The growing popularity of frequent buyer and other loyalty programs also suggests that getting and keeping customer attention is important to sellers[6]. Interestingly, this explanation works about equally well for the "kindly service" and "loss leader" explanations, the two stories that are consistent with the assumption that the CD market was relatively efficient before BargainFinder came along.

Browsing Is Our Business

More important and perhaps more likely is the possibility that BargainFinder and other shop-bots threaten merchants who are in the "browsing assistance" business. Some online merchants are enthusiastically attempting to fill the role of personal shopping assistant. Indeed, some of the most successful online stores have adapted to the new marketplace by inverting the information equation.

Retail stores in meatspace ("meatspace" being the part of life that is not cyberspace) provide information about available products – browsing and information acquisition services – that consumers find valuable and are willing to pay for, either in time and attention or in cash. Certainly meatspace shopping is conducive to unplanned, impulse, purchases, as any refrigerator groaning under kitchen magnets will attest. Retail stores in cyberspace may exacerbate this: what, after all, is a store in cyberspace but a collection of information?

CDNow, for example, tailors its virtual storefront to what it knows of a customer's tastes based upon her past purchases. In addition to dynamically altering the storefront on each successive visit, CDNow also offers to send shoppers occasional email information about new releases that fit their past buying patterns.

One can imagine stores tailoring what they present to what they presume to be the customer's desires, based on demographic information available about the customer even before the first purchase. Tailoring might extend beyond showcasing different wares: taken to the logical extreme it would include some form of price discrimination based on facts known about the customer's preferences, or on demographic information thought to be correlated with preferences. [7]

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[6] Otherwise, it would slightly odd to find firms giving discounts to the customers who presumably most want the merchant's wares. Perfect price discrimination would suggest that the customers who most want the goods should be charged the most. Of course, in a true commodity industry, loyalty programs can also be understood as nothing more than price competition, i.e. discounting.

[7] The U.S. and other legal systems impose constraints on the extent to which stores may generalize from demographic information: for example, stores that attempt race-based, sex-based, or other types of invidious price variation usually violate U.S. law.

A critical microeconomic question in all this is how consumers and manufacturer/sellers exchange information in this market. Both consumers and sellers have an interest in encouraging the exchange of information: in order to provide what the consumer wants, the sellers need to know what is desired and how badly it is wanted. Consumers need to know what is on offer where, and at what price. A shop-bot may solve the consumer's problem of price, but it will not tell him about an existing product of which he is unaware. Similarly, CDNow may reconfigure its store to fit customer profiles, but without some external source of information about customers this takes time, and requires repeat visitors.

Indeed, it requires that customers come in through the front door: all the reconfiguration in the world will not help CDNow or E-bay if customers are either unaware that they would enjoy its products, or if the customers' only relationship with CDNow is via a shop-bot or a meta-site.

The retail outlet in the average mall can plausibly be described as a mechanism for informing consumers about product attributes. The merchant gives away product information in the hopes that consumers will make purchases. Physical stores, however, have fixed displays and thus must provide more or less identical information to every customer. Anyone who looks in the window, anyone who studies the product labels, or even the product catalogs, receives the same sales pitch.

Indeed, some of the more interesting recent writing on the micro-economics of virtual retailing suggests that what is really at stake is a war for the customer's attention, a war for eyeballs. Certainly, the rush to create "portals" that, providers hope, will become the surfer-shopper's default homepage on the Internet suggests that some large investors believe eyeballs ware well worth having. So too does the tendency of successful early entrants in one product market to seek to leverage their brand into other markets.

It may be that the "dynamic storefront" story is the Internet's substitute for the kindly service story. If so, then the rise of agent-based shopping may well be surprisingly destructive. It raises the possibility of a world in which retail shops providing valuable services are destroyed by an economic process that funnels a large percentage of consumer sales into what become commodity markets without middlemen: people use the high-priced premium cyberstore to browse, but then use BargainFinder to purchase.

To appreciate the problem, consider Bob, an on-line merchant who has invested a substantial amount in a large and easy to use "browsing" database that combines your past purchases, current news, new releases, and other information to present you with a series of choices and possible purchases that greatly increase your chances of coming across something interesting. After all, a customer enters seeking not a particular title, and not a random title, but a product that he or she would like. What is being sold is the process of search and information acquisition that leads to the judgment that this is something to

buy. A good on-line merchant would make the service of "browsing" easy and would in large part be selling that browsing assistance.

In this browsing is our business story there is a potential problem: browsing assistance is not an excludable commodity. Unless Bob charges for his services (which is likely to discourage most customers and especially the impulse purchaser), there is nothing to stop Alice from browsing merchant Bob's website to determining the product she wants, and then using BargainFinder to find the cheapest source of supply. BargainFinder will surely find a competitor with lower prices because Bob's competitor will not have to pay for the database and the software underlying the browsing assistance.

If so, then projects like BargainFinder will have a potentially destructive application, for many online stores will be easy to turn into commodity markets once the process of information acquisition and browsing is complete. It would be straightforward to run a market in kitchen gadgets along the lines of the BargainFinder, even if much of the market for gadgets involves finding solutions to problems one was not consciously aware one had. First free-ride off of one of the sites that provides browsing assistance to discover what you want, then open another window and access BargainFinder to buy it.

Students and other people with more time than money have been using this strategy to purchase stereo components for decades: draw on the sales expertise of the premium store, then buy from the warehouse. But the scope and ease of this strategy is about to become much greater.

To merchants providing helpful shopping advice, the end result will be as if they spent all their time in their competitors' discount warehouse, pointing out goods that the competitors' customers ought to buy. The only people who will pay premium prices for the physical good—and thus pay for browsing and information services—will be those who feel under a gift-exchange moral obligation to do so: the "sponsors" of NPR. Thus cyberstores that offer browsing assistance may find that they have many interests in common with the physical stores in the mall, which fear that consumers will browse in their stores, and then go home and buy sales tax-free on the Internet.

Collaborative Filtering

Collaborative filtering provides part of the answer to the information exchange problem. It also provides another example of how information technology changes the way that consumer markets will operate. In their simplest form, collaborative filters such as FireFly bring together consumers to exchange information about their preferences. The assumption is that if Alice finds that several other readers—each of whom also likes Frisch, Kafka, Kundera and Klima but gets impatient with James and Joyce—tends to like William Gass, the odds are good that Alice might enjoy Gass's On Being Blue as well.

In the process of entering sufficient information about her tastes to prime the pump, Alice adds to the database of linked preference information. In helping herself, Alice helps others. In this simplest form, the collaborative filter

helps Alice find out about new books she might like. The technology is applicable to finding potentially congenial CDs, news, web sites, software, travel, financial services and restaurants as well as to helping Alice find people who share her interests.

At the next level of complexity, the collaborative filter can be linked to a shop-bot. Once Alice has decided that she will try On Being Blue she can find out who will sell it to her at the best price.

The truly interesting development, however, comes when Alice's personal preference data is available to every merchant Alice visits. Leave aside for a moment who owns this data, and the terms on which it becomes available. A shop like CDNow becomes able to tailor its virtual storefront to a fairly good model of Alice's likely desires upon her first visit. CDNow may use this information to showcase its most enticing wares, or it may use it to fine tune its prices to charge Alice all that her purse will bear – or both.

Whichever is the case, shopping will not be the same. Microsoft recognized the importance of tracking consumers' preferences rather quickly and bought FireFly in 1998, only three years after the company was founded.

Once shops acquire the ability to engage in price discrimination, consumers will of course seek ways of fighting back. One way will be to shop anonymously, and see what price is quoted when no consumer data is proffered. Consumers can either attempt to prevent merchants and others from acquiring the transactional data that could form the basis of a consumer profile, or they can avail themselves of anonymizing intermediaries who will protect the consumer against the merchant's attempt to practice perfect price discrimination by aggregating data about the seller's prices and practices. In this model, a significant fraction of cyber commerce will be conducted by software agents who will carry accreditation demonstrating their credit-worthiness, but will not be traceable back to their progenitors.

Thus potential legal constraints on online anonymity may have more far-reaching consequences than their obvious effect on unconstrained political speech (Froomkin, 1996). In some cases, consumers may be able to use collaborative filtering techniques to form buying clubs and achieve quantity discounts like Mercata. Or consumers will construct shopping personas with false demographics and purchase patterns in the hope of getting access to discounts (Negroponte, 1996). Business flyers across America routinely purchased back-to-back round trip tickets that bracket a Saturday night in an attempt to diminish airlines' abilities to charge business travelers premium prices. Airlines, meanwhile, have invested in computer techniques to catch and invalidate the second ticket.

Consumers will face difficult maximization problems. In the absence of price discrimination, and assuming privacy itself is only an intermediate good (i.e., that consumers do not value privacy in and of itself), the marginal value to the consumer of a given datum concerning her behavior is likely to be less than the average value to the merchant of each datum in an aggregated consumer

profile. If markets are efficient, or if consumers suffer from a plausible myopia in which they value data at the short-run marginal value rather than long-term average cost, merchants will purchase this information leading to a world with little transactional privacy (Posner, 1978; Scheppele, 1988; Boyle, 1992).

Furthermore, the lost privacy is not without gain: every time Alice visits a virtual storefront that has been customized to her preferences, her search time is reduced, and she is more likely to find what she wants—even if she didn't know she wanted it—and this is ever more true the more information the merchant has about her.

The picture becomes even more complicated once one begins to treat privacy itself as a legitimate consumer preference rather than as merely an intermediate good. Once one accepts that consumers may have a taste for privacy it no longer becomes obvious that the transparent consumer is an efficient solution to the management of customer data. Relaxing an economic assumption does not, however, change anything about actual behavior, and the same tendencies which push the market towards a world in which consumer data is a valuable and much-traded commodity persist.

Indeed, basic ideas of privacy are under assault. Data miners and consumer profilers are able to produce detailed pictures of the tastes and habits of increasing number of consumers. The spread of intelligent traffic management systems, video security and recognition systems and the gradual integration of information systems built into every appliance will eventually make it possible to track movement as well as purchases. Once one person has this information there is, of course, almost no cost to making it available to all.

Unfortunately, it is difficult to measure the demand for privacy. Furthermore, the structure of the legal system does not tend to allow consumers to express this preference. Today, most consumer transactions are governed by standard-form contracts. The default rules may be constrained by state consumer law, or by portions of the Uniform Commercial Code, but they generally derive most of their content from boilerplate language written by a merchant's lawyer. If you are buying a dishwasher you do not get to haggle over the terms of the contract, which (in the rare case they are even read) can be found in small print somewhere on the invoice.

Although it is possible to imagine a world in which the Internet allows for negotiation of contractual terms even in consumer sales, we have yet to hear of a single example of this phenomenon, and see little reason to expect it. On the contrary, to the extent a trend can be discerned, it is in the other direction, towards the "web wrap" or "clip wrap" contract (the neologism derives from "shrinkwrap" contracts, in which the buyer of software is informed that she has agreed to the terms by opening the wrapper) in which the consumer is asked to agree to the contract before being allowed to view the web site's content. Indeed, the enforcement of these agreements is enshrined in law in the

proposed, and very controversial, Uniform Computer Information Transactions Act[8].

The Next Economics?

We have argued that assumptions which underlie the microeconomics of the invisible hand fray when transported into tomorrow's information economy. Commodities that take the form of single physical objects are rivalrous and are excludible: there is only one of it, and if it is locked up in the seller's shop no one else can use it. The structure of the distribution network delivered marketplace transparency as a cheap byproduct of getting the goods to their purchasers. All of these assumptions did fail at the margin, but the match of the real to the ideal was reasonably good.

Modest as they may be in comparison to the issues we have left for another day, our observations about microfoundations do have some implications for economic theory and for policy. At some point soon it will become practical to charge for everything on the World Wide Web. Whether it will become economically feasible or common, it remains to be seen. The outcome of this battle will have profound economic and social consequences.

Consider just two polar possibilities. On the one hand, one can envision a hybrid gift-exchange model, in which most people pay as much for access to web content as they pay for NPR, and in which the few who value an in-depth information edge or speed of information acquisition pay more. At the other extreme, one can as easily foresee a world in which great efforts have been made to reproduce familiar aspects of the traditional model of profit maximization.

Which vision will dominate absent government intervention depends in part on the human motivation of programmers, authors, and other content providers. The invisible hand assumed a "rational economic man," a greedy human. The cybernetic human could be very greedy, for greed can be automated. But much progress in basic science and technology has always been based on other motivations besides money. The thrill of the chase, the excitement of discovery, and the respect of one's peers have played a very large role as well, perhaps helped along by the occasional Nobel Prize, Knighthood for services to science, or a distinguished chair; in the future "Net.Fame" may join the list.

Government will surely be called upon to intervene. Adam Smith said that eighteenth-century "statesmen" could in most cases do the most good by sitting on their hands. The twenty-first century "stateswomen" will have to decide whether this advice still applies once the fit between the institutions of market exchange and production and distribution technologies has decayed.

We suspect that policies which ensure diversity of providers will continue to have their place. One of the biggest benefits of a market economy is that it

[8] http://www.law.upenn.edu/bll/ulc/ucita/cita10st.htm

provides for sunset. When faced with competition, relatively inefficient organizations fail to take in revenue to cover their costs, and then they die. Competition is thus still a virtue, whether the governing framework is one of gift-exchange or buy-and-sell, unless competition destroys the ability to capture significant economies of scale.

The challenge for policy makers is likely to be particularly acute in the face of technological attempts to recreate familiar market relationships. Just because markets characterized by the properties of rivalry, excludability, and transparency were efficient does not mean that any effort to reintroduce these properties to a market lacking them necessarily increases social welfare. Furthermore, in some cases the new, improved, versions may provide more excludability or transparency than did the old model; this raises new problems. Holders of intellectual property rights in digital information, be they producers or sellers, do have a strong incentive to re-introduce rivalry and excludability to the market for digital information.

Increasing Excludability

It appears increasingly likely that technological advances such as "digital watermarks" will allow each copy of a digital data set, be it a program or a poem, to be uniquely identified[9] (Cox, 1996). Coupled with appropriate legal sanctions for unlicensed copying, a large measure of excludability can be restored to the market. Policy makers will need to be particularly alert to three dangers.

First, technologies which permit excludability risk introducing socially unjustified costs if the methods of policing excludability are themselves costly.

Second, as the example of broadcast television demonstrates, imperfect substitutes for excludability themselves can have bad consequences that sometimes are difficult to anticipate.

Third, over-perfect forms of excludability[10] raise the specter that traditional limits on excludability of information such as "fair use" might be changed by technical means without the political and social debate that should precede such a shift.

We counsel caution: In the absence of any clear indication of what the optimum would be, the burden of proof should be on those who argue that any level of excludability should be mandated. This applies particularly to information that is not the content being sold but that is instead about the current state of the market itself. There is a long tradition that information about the state of the marketplace should be as widely broadcast as possible. We cannot see any economic arguments against this tradition.

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[9] For a sketch of excludability might be constructed and maintained for digital documents.

[10] See, e.g., the forms advocated in Working Group on Intellectual Property Rights, *Intellectual property and the national information infrastructure* (1995).

In particular, reforming the law to give sellers a property right in information about the prices that they charge appears extremely dangerous. There has never in the past been a legal right to exclude competitors from access to bulk pricing data. It is hard to see what improvement in economic efficiency could follow from the creation of such a right in the future.

Increasing Rivalry

It is somewhat harder to imagine how rivalry might be recreated for digitized data without using an access system that relied on a hardware token of some sort. Rivalry can be reintroduced if access to a program, a document or other digital data can be conditioned on access to a particular smartcard or other physical object. Perhaps a cryptographically based software analog might be developed that relied on some secret that the purchaser would have a strong incentive to keep to herself. In either case, a form of rivalry results, since multiple users can be prevented from using the data simultaneously.

But imposing rivalry where it is not naturally found means imposing a socially unnecessary cost on someone. The result may look and feel like a traditional market, but it cannot, by definition, carry the "optimality" properties markets have possessed in the past. The artificial creation of rivalry ensures that many users whose willingness to pay for the good is greater than the (near-zero) marginal cost of producing another copy will not get one.

Policy makers should therefore be very suspicious of any market-based arguments for artificial rivalry.

Increasing Transparency

It might seem that anything which encourages transparency must be good. Indeed, all other things being equal, from the point of view of consumers, merchants selling products that can survive scrutiny, and the economy as a whole, increases in the transparency of product markets are always a good thing. The issue, however, is to what extent this logic justifies a transparent consumer.

The answer is fundamentally political. It depends on the extent to which one is willing to recognize privacy as an end in itself. If information about consumers is just a means to economic end, then there is no reason for concern. If, on the other hand, citizens perceive maintaining control over facts about their economic actions as a good in itself, some sort of governmental intervention into the market may be needed to make it easier for this preference to express itself.

The Next Economics?

We have focused on the ways in which digital media undermine the assumptions of rivalry, excludability, and transparency, and have tried to suggest that the issue of transparency is at least as important, complicated, and interesting as the other two. In so doing we have been forced to slight

important microeconomic features of the next economy. We have not, for example, discussed the extent to which the replacement of human salespeople, travel agents, and shop assistants will affect the labor market.

The consequences may be earth-shaking. For about two centuries starting in 1800 technological progress was the friend of the unskilled worker: it provided a greater relative boost to the demand for workers who were relatively unskilled (who could tighten bolts on the assembly line, or move things about so that the automated production process could use them, or watch largely self-running machines and call for help when they stopped) than for those who were skilled. The spread of industrial civilization was associated with a great leveling in the distribution of income. But there is nothing inscribed in the nature of reality that technological progress must always boost the relative wages of the unskilled.

Nor have we addressed potentially compensating factors such as the looming disaggregation of the university, a scenario in which distance learning bridges the gap between elite lecturers and mass audiences, turning many educational institutions into little more than degree-granting standards bodies, with financial aid and counseling functions next to a gym, (just maybe) a library. While this may benefit the mass audience, it has harmful effects on one elite: it risks creating an academic proletariat made up of those who would have been well-paid professors before the triumph of "distance learning" in the lecture hall.

Along a number of dimensions, there is good reason to fear that the enormous economies of scale found in the production of non-rivalrous commodities are pushing us in the direction of a winner-take-all economy (23). The long-run impact of the information revolution on the distribution of income and wealth is something that we have not even begun to analyze.

Similarly, we have completely ignored a number of interesting macroeconomic issues. Traditional ideas of the "open" and "closed" economy will have to be rethought on sectoral grounds. Once a nation becomes part of the global information infrastructure, its ability to raise either tariff or non-tariff walls against certain foreign trade activities becomes vanishingly small. Nations will not, for example, be able to protect an "infant" software industry. It will be hard to enforce labor laws when the jobs telecommute away.

National accounts are already becoming increasingly inaccurate as it becomes harder and harder to track imports and exports. Governments are unable to distinguish a personal letter with a picture attached from the electronic delivery of a $100,000 software program. Monetary and financial economics will also have to adapt.

Traditionally the field of economics has always had some difficulty explaining money: there has been something "sociological" about how tokens worthless in themselves get and keep their value that is hard to fit with economists' underlying explanatory strategies of rational agents playing games-of-exchange with one another. These problems will intensify as the nature and

varieties of money changes. The introduction of digital currencies suggests a possible return of private currencies. It threatens the end of seigneurage, and raises questions about who can control the national money supply.

The market system may well prove to be tougher than its traditional defenders have thought, and to have more subtle and powerful advantages than those that defenders of the invisible hand have usually listed. At the very least, however, defenders will need new arguments. Economic theorists have enormous powers of resilience: economists regularly try to spawn new theories such as evolutionary economics, the economics of organizations and bureaucracies, public choice theory, and the economics of networks. We will see how they do.

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New Economy and Market Dynamics: Changes to Existing Industries and Firms

The Anticipated Effect of the SuperNet on Alberta's Media Industry

Aaron Braaten

The SuperNet is Alberta's initiative, together with Bell Canada and Axia Internet, to bring broadband internet over 4,700 schools, hospitals, libraries, provincial and municipal government offices in 422 communities across rural and urban Alberta (SuperNet website, 2004). The Government of Alberta hopes that this new infrastructure project will have positive long-term economic consequences for the Province's future. The construction of the Alberta SuperNet creates an ideal laboratory for researching the impact of structural technological change on a resource-rich economy. Prior to this project, only 110 communities in Alberta had Internet Service Providers (ISPs) capable of offering high-speed internet, whereas after the project, 422 communities will become "SuperNet" communities (SuperNet website, 2004).

The aim of the SuperNet is to decrease the "Digital Divide" separating rural and urban residents with respect to Internet usage (SuperNet website, 2004). Internet connection costs are of a highly convex nature—internet connection costs increase dramatically as population densities decrease, which is a reality that does not bode well for rural residents. While urban residents are able to take full advantage of the potential impacts of broadband (e-commerce, e-education e-governance etc.) rural residents must dial into their nearest ISP, sometimes miles away and pay long-distance charges to do so (SuperNet website, 2004). Telecommunications companies often find it cost-prohibitive to bring broadband to small communities due to low population densities, and the Province's initiative will enable ISPs to offer universal broadband pricing throughout the province.

Research Questions

With the potential for increased information sharing comes several research questions worth investigating. Most important for this study is the impact of broadband on other forms of information media—television and radio broadcasters, daily and weekly newspapers, magazines, book publishers—and other information-sharing media such as telephony and direct mail. Therefore, our central research question asks: "What will be the form, duration and intensity of the SuperNet's impact on the various forms of media throughout Alberta?" Will small-town newspapers be forced to close as print advertising revenues dry up, or will the SuperNet benefit them in other ways? Will

journalistic style and content change? Are various forms of print media in Alberta doomed for extinction? Will businesses change how they advertise in small towns? These are just some of the potential risks of technological change. The next section will outline data that have been identified and will assess the feasibility of obtaining and using the data to model respective media industries.

Technological Shocks

Technological advancements in network industries are characterized by steady growth with periodical shocks when a new technology is introduced. Past economic development has been characterized by periodical technological shocks:

Table 1. Technological Shocks to Communications Industries

1840's	Telegraph
1870's	Telephone
1890's	Radio Telegraphy
1920's	Radio Broadcasting
1950's	Television Broadcasting
1960's	Geostationary Satellite Communications
1970's	Computer Communications
1980's	Optical Communications
1990's	Internet and Mobile Communications

Source: Shaw, Robert. *The Impact of New Technologies Such as Broadband and VOIP on Telecommunication Markets*. Presentation given at the Seminar on Economic and Market Analysis for Central and Eastern European Countries (CEEC) and Baltic States, Czech Republic, Prague, September 9-11, 2003. Internet Telecommunications Union website, http://www.itu.int

Each progressive advance in communications technology has led to an increase in human connectivity, or the ability of humans to share information across geographic locale, cultural constraint and time. The Internet can create new "niche communities" and enable persons in more isolated areas to connect with people of similar interests through web forums, chat and online dating services. The change in how economic agents obtain, share and disseminate information coincides with a change in economic behavior. If we think of each technology 'piggy-backing' on the previous, we can see how the technologies confront each other as compliments or as competitors. For example, the existence of railways made it easier to install telegraph lines, and in this sense they are complimentary. The telegraph allowed for quicker communication between railway stations than the trains themselves, thus aiding in the operation of railways. Where telegraphy made it unnecessary to travel via train or send messages through the postal service in order to communicate, telegraphy was in direct competition with railways and the postal service. Carrying this through other forms of technology, the telephone piggy-backed on telegraph lines with respect to its installation, but competed directly in terms of communication and

operation. Radio represented a new frontier of innovation that contested the long-standing position of fixed-type print, only to be later contested itself by television. Television was supposed to be able to offer everything radio did, but with pictures; fortunately for radio, though, television was not portable, did not work in the car and made little sense in the workplace (Canadian Association of Broadcasters, 1998).[11]

Shaw (2003) argues that in each case of technological shock, analysts have consistently under-estimated the impact of new technology on everyday human interconnectivity while overestimating the overall usefulness and economic possibilities of the "new economy".[12] The 1990's dotcom craze sent already overvalued dotcom stocks soaring due to feedback mechanisms, Ponzi schemes and "irrational exuberance" (Shiller, 2001).[13] It could very well be that many of the anticipated benefits of delivering high-speed internet to rural areas suffer from the same irrational exuberance. This implies that the stream of benefits related to education, governance and public health would have a separate discount rate from the benefits of more innocuous uses such as online chat, media downloading and general interpersonal connectivity. Therefore, a theoretical framework that focuses on the human interconnectivity aspects of technology first will indicate the direction of future internet use.

"Piggybacking" Technologies

The Alberta SuperNet, like its predecessors, has "piggybacked" on other networks in a complimentary fashion—roadways for its construction and dial-

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[11] Submission of the Canadian Association of Broadcasters to the CRTC New Media Hearing: Making New Media Work for Canada Broadcasting PN 1998-82 Telecom PN 98-20-1. APPENDIX 4: Competition for Radio in the New Media Age: A Research Paper from the Canadian Association of Broadcasters, November 2, 1998. Permanent link: http://www.cab-acr.ca/english/research/98/appendix4_nov298.shtm

[12] Cited in Shaw (2003): "For the first 30 years of the telephone, promoters struggled to identify the killer application that would promote its wide adoption by home owners and businesses. At first the telephone was promoted as a replacement for the telegraph, allowing businesses to send messages more easily and without an operator. Telephone promoters in the early years touted the telephone as new service to broadcast news, concerts, church services, weather reports, etc. Industry journals publicized inventive uses of the telephone such as sales by telephone, consulting with doctors, ordering groceries over the telephone, listening to school lectures and even long distance Christian Science healing! The concept that someone would buy the telephone to chat was simply inconceivable at that time." C. Fischer, *America calling A social history of the telephone to 1940*. Berkeley: University of California Press, 1994. "The popularity of email was not foreseen by the ARPANET's planners. Roberts had not included electronic mail in the original blueprint for the network. In fact, in 1967 he had called the ability to send messages between users "not an important motivation for a network of scientific computers" . . . . Why then was the popularity of email such a surprise? One answer is that it represented a radical shift in the ARPANET's identity and purpose. The rationale for building the network had focused on providing access to computers rather than to people." – J. Abbate, *Inventing the Internet.* Cambridge; MIT University Press, 1999

[13] Shiller, Robert. *Irrational exuberance*. New York: Broadway books, 2001.

up connections for paving the way of the internet, etc. The focus of this paper will be the instances where this new network technology confronts other information sharing networks (media) in a competitive or complimentary fashion. Furthermore, it will identify further research questions concerning how these impacts ought to or can be tested empirically, and which data exists to do so. Past predictions of the internet's impact on everyday life seemed overblown, as it was supposed to replace the telephone, newsprint, television and even radio in one fell swoop. Just as the television impacted radio in the area of sitcoms and dramas, but failed to compete with radio's portability, the internet is not likely to have a parsimonious impact on all media. It will impact some media more than others due to a mixture of human preferences, technological lock-in and the degree of complementarity and competition amongst these forms of media. The purpose of this paper, then, is to adopt such a framework to identify those areas where technology will likely remain locked in, and areas where the broadband will alter the 'rules of the game'.

Weekly Newspapers: Most Likely to be Affected?

Of all media, small weekly newspapers stand to lose or to gain the most from the SuperNet. Since the internet changes the nature of community from geographical space to cyberspace, users are able to expand their choices regarding which communities they belong to. However, since the small-town newspaper is a key hub of local civic participation, it can potentially provide an incubator for generating interest in broadband at the local level. In this sense, broadband internet can confront small-center newspapers as a "complement" through partnering with ISP providers, hiring technical staff with web design skills and by generating "network externalities" that add to the value received by the community from the Internet. The Alberta SuperNet is likely to exhibit "network externalities" which are said to exist when "when the amount that one party is willing to pay for access to a network depends on who or how many other parties are connected to it" (Varian, 2001).[14] Therefore, the Alberta SuperNet could "piggy-back" on the small-town newspaper with the goal of reaching a critical mass of subscribers, and this can be done if small papers partner with ISP providers in their local market.

Whether or not the existence of broadband internet will negatively affect community newspapers depends on several factors which include: the demands of readers brought about because of increased connectivity, how and from whom they obtain news online, the changing borders of community, how effectively newspapers can serve as a community hub and whether or not these newspapers respond to the anticipated increase in demand for a website version of the paper. Of 106 AWNA newspapers, only 18 did not have a viable web presence, and few had very much advertising space.

[14] http://www.sims.berkeley.edu/resources/infoecon/Networks.html#extern

Small weekly newspapers are unique in that they may have minimum efficient scale issues, and their individual circulation may not justify a significant online presence. Hendriks (1999) provides a study of MES in the Netherlands (Hendriks, 1999).[15] Since these newspapers obtain their revenue through advertising, they may not be able to operate as profitably online as in print. Minimum efficient scale can be interpreted as the minimum output needed for a firm to operate at the lowest point of its long run average cost curve. When the ratio of fixed to variable costs is very high, there is a potential to exploit economies of scale and minimize costs by expanding output. In other words, if the ratio of overhead costs relative to running costs is quite high, a firm is more likely to be able to exploit economies of scale in production. Varian and Shapiro (1999) argue that information markets follow this cost pattern, as the information is costly to produce, but cheap to reproduce.[16] Therefore, there is a minimum number of advertising hits a small newspaper will need in order to justify a strong online presence, just as there exists a minimum circulation that justifies production.

Goel and Hseigh (2002) argue that the internet in general has positive competition effects for online businesses, as the internet lowers sunk costs for small businesses and therefore has the ability to decrease barriers to market entry (2002).[17] Applying this argument to online journalism, the internet ought to decrease barriers to entry. However, more attention needs to be paid to smaller, weekly papers, whose staffing abilities are considerably less than those of larger daily newspapers. Therefore, it may be cost and time prohibitive for small newspapers to adopt an online presence. Because of this, weekly newspapers may have "minimum efficient scale" issues concerning web implementation.

The internet has decreased barriers to entry into the market of information supply and the new media is placing new demands on the old media. This is evident in the wake of the recent rise of "bloggers"—persons who publish online web-logs—to the status of amateur journalists. Free online programs such as Blogger, Movable Type and Photobucket allow anyone with the desire to do so to publish text and photos online. Bloggers could be modeled as a "competitive fringe", or "fifth estate" keeping watch over the mainstream media (MSM) and holding it accountable. If the MSM has a story wrong, blogs, acting as a competitive fringe, can expand their output of coverage readily in response. This brings an element of accountability to the MSM and will strengthen the need to have accurate, concise and detailed original content.

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[15] Hendriks, P.. *Newspapers: A lost cause? Strategic management of newspaper firms in the United States and the Netherlands*. Kluwer (1999)

[16] Varian, V. & Shapiro, C. (1999) *Information rules*, Harvard Business School Press.

[17] Goel, R.K. & Hsieh, E.W.T. Internet growth and economic theory, *Netnomics* 4: 221–225, 2002.

Online content differentiation will become increasingly important to small-community newspapers. By producing online content that is original and outward focused, small newspapers can end up having their websites hyper-linked by web-based forums, blogs and communities. This can generate traffic and interest in local perspectives on current events and expand the paper's internet footprint beyond its print circulation.[18] Having real-time capabilities would allow small-center newspapers to cover events as they happen, thereby giving them "jump time" ahead of larger media outlets who must mobilize to the location of interest.

Structure of the Market in Alberta

Data from AWNA, CARD and CCNA all indicate that there are 106 weekly community newspapers in Alberta.[19] In all, ownership of these papers is broken down into six groups[20]:

Table 2. Newspaper Ownership and Market Shares in Alberta

Major Corporate Owner (10+ papers)	BC	# papers in Alberta	Share %	
Black Press		4	3.773585	
Bowes Publishers Limited	-	31	29.24528	
Great West Newspaper Group Ltd.	-	10	9.433962	
Independent Group (2-9 papers)		19	17.92453	
Independent Single (1 paper)		40	37.73585	
Unknowns / No Information		2	1.886792	
Total		106	100	
0 < HHI[21] < 10,000				2707.369

The HHI value of 2707.369 indicates that the market for community newspapers is closer to a competitive environment than a monopolistic environment, but this is misleading. Community newspapers do not necessarily circulate throughout the province, but instead have a monopoly/duopoly in their smaller community market. Therefore, it would be useful to examine the HHI in terms of total circulation, as well as by breaking newspaper markets

[18] The author has noticed that small media outlets such as *The Tyee* in British Columbia have adopted an online-only version of their community newspaper that balances local, regional and national coverage. http://www.thetyee.ca
[19] AWNA FactSheet, 2003, www.awna.com
[20] From the CCNA ownership chart.
[21] HHI is the Herfindahl-Herschman index, which the sum of the squared individual market shares. A value close to 10,000 represents a monopoly, whereas a value close to one represents a competitive environment.

down by municipality/county. Examining which communities are served by a given number of AWNA member newspapers might give a better indicator. Most promising is the data from the Audit Bureau of Circulators in the form of the *Canadian Newspaper Circulation Factbook*, which *contains* "audited circulation data is listed by market, county, census division, and regional district or territory for the past 5 years" as well as their *Newspaper County Penetration Reports,* which are based on daily newspaper Audit Report figures (Audit Bureau Website). These reports contain a list of all counties by state or province, the number of households within each county and the newspapers with circulation totaling more than 100 in a county. The best way to analyze community newspapers, then, is to determine the "relevant market", and this could probably be done with the Audit Bureau of Circulators data[22]. If community newspapers circulate out-of-county or even out of the community, then the relevant market can tell us which community newspapers compete with each other for readership, and which ones are a monopoly in their community or county.

The AWNA 1995 Survey

A 1995 readership survey by the Alberta Weekly Newspaper Association found some notable differences between readership of weekly and daily newspapers.[23] The survey reports that 69% of households polled reported reading every issue of a weekly paper, and 99% of households overall had at least one person read the paper, with half reporting two persons. Daily newspapers were read sporadically, and no questions were asked about related advertisement reading. 59% of respondents indicated that they "always" look at the classified ads, and 66% reported spending at least 15 minutes per week reading the weeklies, with the bulk concentrated around 15-45 minutes per week. When asked where they get local news, 50% of respondents replied "local" weekly newspapers, 9% responded "daily" and 20% responded "radio" while others claimed "other" or "not applicable". Respondents also said that they used local newspapers for 61% of their real estate queries and in 41% of the instances when they sought information about trucks and autos. In all categories selected, community newspapers were the preferred medium. The 1995 readership survey, however, is outdated and no new research is being done.

[22] Relevant markets in this case would refer to geographical market spaces based on competing print circulation of various newspapers within a region.

[23] AWNA 1995 Provincial Readership Survey http://www.awna.com/readershipSurveyProv.htm (as of 2004)

Weekly Newspapers: Potential Partnering with ISP's?

Lowery (2003) surveyed over 100 Mississippi area weekly newspapers using an email that invited the papers to participate in an online survey, with a 95.4 response rate. Lowery concluded that it was "unlikely that many small-community sites will be able to—or wish to grow … the resources necessary to increase interactive options [of websites] in the future" (p.89). His study also recommended that chain-owned papers adopt centralized formats in order to increase the interactivity of websites. In their review, Mings and White posit that small-center newspapers have had positive experiences by combining web development operations and news reporting (2000). Mings and White highlight instances where internet newspapers offered "bundled" services—internet access bundled with a newspaper subscription—by partnering with local Internet Service Providers, a "popular" but "roundabout" way for newspapers to gain revenue (p.84). Citing Meyer (1995), they say that "this model is most promising in markets where reasonably priced internet (and/or proprietary services) access is not readily available, most probably in small or remote areas" (Ming & White, p.84).

The idea that a newspaper could partner with an ISP to provide, promote and foster internet usage by community businesses could also be the niche needed to make the SuperNet catch on in small centers. The SuperNet is a "to-curb" installation, and whether or not an ISP will find it profitable to enter the market depends on several factors. Two newspapers in the Mings & White study have had positive experiences with this strategy, but cite one limiting factor: competition. If competition is fierce for local ISP's, then it makes little sense for community newspapers to incur the up-front sunk-costs of becoming an ISP. A better option would be to partner with existing ISP's in the area. Mings & White highlight the experience of one paper, which heard that an "aggressive, professional provider" was moving into the community, and it decided to "cut a deal for revenue sharing", reciprocating by advertising the provider in the paper, and having readers log-on to the main page of the newspaper (Roiter, 1996). Becoming an actual ISP was not feasible for these newspapers; however, by partnering with more specialized ISP's they were able to generate extra revenues. Mings & White suggest that online newspapers could venture into the web design business by designing web-pages for local businesses and then generating site revenue by advertising these sites on their main page.

Lowery also found that the best strategy for web implementation by small newspapers was to partner with an outside vendor for web services in order to get around the substantial investment in web expertise (p. 88). In Alberta, chain newspapers stand best equipped to take advantage of ISP partnerships. Bowes Publishers, a subsidiary of Quebecor (Sun Media) appears to have internalized web design and offers its newspapers a design template. Some AWNA member papers depend on the AWNA for such a web template, whereas Greatwest papers tend to be more decentralized. Due to the importance of local

newspapers to the local community, and due to the potential for ISP partnering between weekly media and service providers, such a strategy could be a requirement for broadband usage to reach critical mass in small towns. By cross-promoting broadband, it is likely that certain towns could generate the "network externalities" needed to add value to the existence of the SuperNet in small centers.

The Impact of Broadband Internet on Radio in Alberta

A key study done by the Broadcast Bureau pf Measurement studied the relationship between the internet and radio (2001). The study found that: "Of People Who Have Internet Access at Work: 1) 73% of the people who have Internet access at work also have Internet access at home; 2) 87% of people who have Internet access at work said they are accessing the Internet the same amount or more than they were compared to the same time last year. Finally, 3) 58% access the Internet at work at least once per day" (p. 9). Of those that were surveyed, roughly 80% were aware that it was possible to listen to the radio on the internet, and of all internet surfers, 33% had been to a radio station's website, with much of this distribution concentrated amongst younger listeners (p.14, 16). Furthermore, 75% of those surveyed responded that they remembered the radio station discussing its website on-air (BBM, p.21). Respondents were mostly concerned with the ease of use of the website, with just under half concerned with being able to listen on-line (BBM, p.22). In addition to this, long-time internet users were more likely to attempt to listen to the radio on-line and these people were more likely to have made a purchase on-line within the past 6 months (BBM, p. 25).

Of Alberta's Canadian Association of Broadcasters member radio stations, approximately 33% of all stations had a "listen live" feature, and just over 33% posted weather on their site.[24] Radio station websites in Alberta are not technically advanced, nor are they using RealPlayer or Windows Media technology. Chain-owned radio stations (Such as Corus Entertainment) in larger centers possessed a common design template that had both of these features, suggesting that chain stations were centralizing web design. Other radio stations used a specialized out-of-house web design company, Maple Solutions, to design their web space.[25] Internet radio appears not to be catching on in Alberta as well as the BBM study had suggested.

Radio stations in larger centers tend to be equipped with radio internet capability. Internet radio is not likely to confront broadcast radio as a displacing

[24] Using the radio member list from http://www.cab-acr.ca , websites were each visited, and the two key features, weather (a proxy for web design dexterity) and "listen live" (a proxy for radio internet) were identified and catalogued as dummy variable, where the dummy was equal to 1 if either feature was present, zero otherwise. The average of the dummy variables yields a percentage figure, with 34% for "listen live" and 36% for "weather".

[25] http://www.maplesolutions.ca/

technology, but depending on the costs of relay towers, it might be cost-effective to promote internet radio. Internet Radio will not likely displace broadcast radio due to the automobile, satellite radio aside. Furthermore, there is no revenue difference if a person is listening to their favorite radio station at work on the radio or over the internet. The only difference, possibly, could be in the quality of the broadcast and the person's distance from a relay tower. In this sense, internet radio has potential to expand radio footprints globally, and broadband is not likely to have tremendous displacement effects.

The Impact of Broadband Internet on Television in Alberta

Most television stations in Alberta have embraced the internet as an information medium, especially since almost all stations are subsidiaries of the CBC, Craig Media, CTV or CanWest/Global media firms. Of the Alberta television stations listed in the CARD Database, 66% of them had the weather posted on their website, and 40% posted online classifieds, or had a link to such a service. None had any form of internet television broadcast available, indicating that internet television has not been the force predicted in the past. Alberta's TV stations tend to use their websites to post breaking news (usually tied with the local paper, as with Canwest). The Canwest websites covered the local news of major centers in Alberta (with the smallest center being Lethbridge), but no links to weekly papers were identifiable. Global/Canwest has recently moved to a subscriber content revenue model that limits web access to archives and premium content to subscribers only. In this sense, non-rival information carried by other media firms is free whereas exclusive content such as opinion articles and in-depth features are user-pay. The canada.com website offers free email, news updates and financial portfolios similar to yahoo.ca, suggesting that CanWest generates an audience or potential market by providing the services free of charge.

Television stations in Alberta are using websites as a part of their total media package—links to local news in major centers, financial portfolios etc., and seem to be adapting to the general internet use patterns of Canadians. Craig Media sites (A-Channel, recently acquired by CHUM) also post television schedules in advance to allow viewers to plan their viewing. However, due to the lack of robust data sources, it will be difficult to witness any displacement effects of broadband internet on television. So far, TV station websites seem to be complimentary technologies that serve to build brand loyalty amongst viewers.

The Impact of Broadband on Book Publishing in Alberta

Broadband internet could affect book publishers if internet users feel more confident making purchases online using a secure "always on" broadband connection than if they were using a dial-up connection that can possibly hang

up when a person calls. Media Metrix has stated that people with broadband connections are more likely to make a purchase online due to this psychological effect.[26] In 2000, the report entitled *Competitive Challenges Facing Book Publishers in Canada* reported that:

> *Among the major changes taking place in the Canadian book publishing industry are the following: the consolidation of retail outlets into mega-stores controlled by a very small number of companies4, the introduction of electronic markets through the Internet, and a reduction in institutional purchasing of books. Internet distribution and consolidation of retail distribution are putting more pressure on publishers to offer greater discounts to the distributors. At the same time, costs for distributing their books in the US market are increasing, thus creating financial barriers to entering into and expanding in the important US market (p. 12).*

Furthermore, their study found that "[t]he growth of megastore chains, in particular Chapters, and the growth of the Internet and companies such as Amazon.com, Chapters.ca and others as major distribution channels are putting added downward pressure on the net prices received by Canadian book publishers (p.77)". If publishers are selling to a monopsony buyer (single buyer) then that buyer can potentially gain market power in the price it pays for books, with the result that the monopsony buyer may want to vertically integrate with wholesalers in order to streamline its process. "The creation by Chapters of its own wholesale distribution company will further reinforce the bargaining advantage of the buyers and intensify demands for additional price discounts by the book publishers. To sell books in Canada, the roads will increasingly pass through Chapters" (CCFBP Report, 2000, p. 77).[27]

The most likely impact of the SuperNet on book publishing is to affect book sales in small communities. Local book shops are already threatened by Chapters in even the bigger centers such as Edmonton[28], and in smaller centers, some have been driven out by supermarkets and department stores like Zellers and Wal-Mart. Future study should examine the psychological aspects of purchasing online, how internet connection affects this and how consumers are able to expand their domain of choices by making book purchases online. On one hand, Chapters could limit selection in order to focus on revenue

[26] From an email with Jupiter MediaMetrix. Their data is hard to come by and is expensive.

[27] The Report went on to state: "Chapters accounts for more than 50% of the retail book market in Canada, and through its Pegasus subsidiary, accounts for more than 75% of the wholesale market. Chapters now charges for placement, a US practise that has come to Canada. Consequently, as the retail distributors increase their market power *vis-a-vis* the book publishers, they are demanding, and in most cases extracting, greater price discounts and more flexible and generous return policies. The Canadian book publishers' profit margins are being squeezed further. (p.81)".

[28] In Edmonton, Greenwood's, a small specialty bookstore, relocated from its home on Whyte Ave. after Canadian chain Chapters set up a mega-store just several blocks away.

maximizing books, which could create a niche market for small booksellers. On the other hand, consumers might just expand their market electronically by purchasing from specialty sellers in other cities, provinces or countries.

The greatest threat to publishers, however, comes in the form of Bit Torrent and peer-to-peer file sharing, which is best-suited to high-speed broadband. BitTorrent allows users to obtain a full file by downloading bits and pieces of a file to construct a full file. Currently, libraries in Alberta give notice that no greater than 20% of a book may be photocopied, but BitTorrent technology allows users to accumulate full copies through file-sharing. BitTorrent and file-sharing sites like Suprnova.org have recently been the recipients of a legal crackdown by the Motion Picture Association of America (MPAA) for copyright infringement.[29] The legal battles will likely continue for some time, and programs similar to Bit Torrent will eventually come to the same conclusion as Napster, which has successfully incorporated property rights and copyright fees into its download technology.

Conclusions

Of all forms of media, Weekly newspapers stand to gain just as much as they stand to lose. Technological change demands new methods of generating revenue, and this can best be done by using the small-town newspaper as a promotional tool for broadband ISP providers. The SuperNet is a "to-curb" installation and some mechanism is necessary to generate a critical mass of subscribers in a small area, from which "network externalities" can be generated. Future study needs to examine panel (cross-series) data from AWNA fact sheets to examine a process over time. It is likely that the SuperNet will have a lag effect through time if ISP's are slow to pick up on broadband connections in small towns. Studies should also examine the content of websites and their technological level of expertise. Judging from Lowerey's positive response to a web-based survey instrument, these technical details could be gathered independently of the AWNA. Finally, newspapers studies offer an excellent choice for a study because newspapers are discretely observable, and the audit estimates appear to be very reliable.

Daily newspapers in Alberta seem to have partnered well with the Internet, especially if they are horizontally integrated with television broadcasters. Television broadcasters want to have up-to-the-minute news updates, something that the daily newspapers can provide. Since Canada.com is a media conglomerate website, operations data from the website would yield interesting results.

Radio stations in Alberta appear to be slow to adapt to internet technologies. Likely, smaller centers do not feature a "listen live" feature because many local

[29] MPAA Press Release for November 4, 2004. http://www.mpaa.org

listeners would do so on an inferior dial-up connection. These small center radio broadcasters could feasibly expand their footprints by taking advantage of such a feature, and may potentially have to expand their technological capacity to respond to rural demands for internet radio if relay signals are not strong throughout their relevant market.

Book publishers in Alberta are adapting to the changes brought about because of the evolution of online book sales. Depending on how consumers behave over a particular dial-up connection, broadband might increase the likelihood of rural readers to purchase online, especially if selection is limited in their local area.

Further research should look into community development literature within the framework of net impact analysis and conduct a cost-benefit analysis that incorporates or estimates non-obvious costs stemming from negative externalities.

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Big Brother: Analyzing the Media System Around a Reality TV Show

Tobia Fredberg
Susanne Ollila

Although decades have past with cross-media publishing held high in the media industry, the tidal wave of company activity in the area has let itself be waited for, leaving us with a good buzz word and applications of the concept that fall short of the great visions of how channels and content could be combined to create a new form of concerted storytelling. We see the gathering of multimedia content on the Internet, and notice the same material occurring in different channels, but the creation of new forms of media where the different channels reinforce each other seems to be sparse. This chapter makes an example of such a trial. It describes and analyses how different channels can be organized in a system around a piece of information, or in this case, the reality TV series "Big Brother" in its Swedish 2004 edition. It illustrates how the collective of different information and communication channels come together to create a media system in which the production of Big Brother, through its consumers, takes place just as much outside the televised series as in it. As such, this work aims to make a contribution to the literature in the fields of media management, innovation and business strategy, as the product concept which is in focus of the chapter influenced the whole set of activities and value creation efforts that create the strategy (Normann, et al., 1994; Porter, 1996).

The much loathed reality TV series have evolved into an almost omnipresent phenomenon in the public sphere. Their presence and popularity can be noted through:

- Their influence on language—to be "voted off the island" from reality series Robinson/Survivor seems to become an established expression in English, and to call something a "dokusåpa" is in Swedish a denouncing expression for something stupid and filled with conflicts.
- Coverage in the press—scary as it might seem, during the first 26 weeks of 2004, the phrase *Big Brother* occurred 254 times in *Aftonbladet*, Sweden's largest newspaper. In the same time, the word *statsminister* (prime minister) occurred 199 times (www.mediearkivet.se, 2004).
- TV Statistics—during 2004, reality TV-formats accounted for 3 of the

> 25 most seen television shows in Sweden. For Kanal5, which is the channel in focus of this article, the first and last Big Brother shows of the season were the two most seen shows in the first six months of 2004 (Allt_om_Media/mms.se, 2005).

When reality TV series are discussed in the academic literature, it is much in the terms of critical reflections on the content and effects of the shows. The reality TV genre has been heavily criticized for its character of "social Darwinism" (e.g. Murray 2001), its impact on the public (Breyer, 2004), and whether it is as real and authentic as the producers would like to claim (Bagley 2001). Despite the loud critique towards the shows, some debaters argue that this form of entertainment bears with it the real development within the TV medium (e.g. Schultz, 2004). This chapter does not take moral, nor qualitative aspects into account. Instead, the chapter is exploratory and aims at describing the media system that was built up around the production of Big Brother 2004 and how customers were involved in this system.

New information and communication technologies provide existing media companies with vast opportunities for development of new media product concepts and a different kind of interface to customers (Danneels, 2003; Fredberg, 2003) than was earlier the case. With the introduction of new channels, the role and the storytelling of the established channels also change (Weibull, et al., 2000). The combination of different channels also provides a new form of combined storytelling which allows the development of content in new directions. When studies have been made of the Internet's influence on the media business, they have to a large extent been focusing on the Internet's effect on the development of different media channels in isolation (Brill, 2001; Chyi, et al., 2001; Saksena, et al., 2002; Singer, 2002; Thompson, et al., 2001) as well as the problems of finding viable business models for web media (Hendriks, 1999; Hoffman et al., 2000; Picard, 2000).

The involvement of customers in many channels seems to be less covered in the academic literature. Stone, Hobbs and Khaleeli (2002) discuss "multichannel management" but do not argue for customer involvement. Other authors have also treated the suitability of different channels for different purposes. Sabelström-Möller (2001) discusses the match between channels and information categories, van Dijk (1999) media channels for different uses in work and Geyskens, Gielens and Dekimpe (2002) the impact of channel additions on the stock market valuation. Deery (2003) makes a very interesting expose of what she calls "participatory viewing". She does many remarks in line with the arguments in this chapter, but her focus is on the "refashioning" of the TV and she argues pro et contra whether the two channels will converge and if so, how. TV becomes interactive, she says, when it is transferred to the web. In this new medium, viewers participate and take on new roles. She notes that television series get counterparts, both sanctioned and non-sanctioned on the Internet, and that it many times is the non-sanctioned sites that are the most

important for the production, seen in a larger perspective. Parallel to this development is also the development of digital newspapers, which bear with them the potential to become complementary, not substituting to the paper-newspapers as they are developed into a new kind of media rather than a re-write of the paper editions. The interactivity makes an important difference here, as the relation from the newspaper to the community and between the community members themselves is an important part of the strategic direction of the newspapers (Fredberg, 2003).

The structure of the chapter is as follows: it begins with a theoretical background on channels and their relation to the creation of customer groups, followed by a description of the methodological approach that was used. The Big Brother case is then sketched out and discussed, and conclusions are drawn.

Theoretical Background

Since the introduction of reality-TV series just over a decade ago, the genre has literally exploded. Format makers such as the Dutch media giant Endemol (www.endemol.com) exploit any potentially spectacular aspect of human life in shows such as hysterical wedding planning in "Bridezillas" to free plastic surgery in "Extreme Makeovers", to starving in South-East Asia in Survivor, to Ozzy Osbourne in "The Osbournes", and naturally to people being locked up together for over three months in "Big Brother", as in the case for this article.

Breyer (2004), in a critical remark of the genre, traces the reality TV series' antecedents back to shows such as "Candid Camera", "America's Funniest Home Videos" and "An American Family", a 1972 show filming the everyday life of a family in California. The kick-off of the current trend in reality TV is probably MTV's "The Real World", starting in 1992 with the filming of seven young people getting together to share a flat on Manhattan (Bagley, 2001).

When reality TV series have been in focus for academic scholars, it has mostly been in communication studies and political science. Many times the analysis has been done either from a critical perspective (Murray, 2001), from the point of identity formation in the reality TV series (Jones, 2003), or from the issue of authenticity in the shows (Bagley, 2001). Some literature makes the connection to other societal phenomena, for example political strategy (Jervis, et al., 2000).

The Internet, a communication tool as much (if not more) as an information tool, increases the possibilities for customer interaction vastly and hence offers a model for the mass media alternative to the traditional passive one-to-many model (Poster, 2001) and the active one-to-one model (Peppers, et al., 1997). The crucial step in the one-to-one model is the engagement of customers in an ongoing dialogue which enables learning more about their particular interests, needs, and priorities. There are TV shows, e.g. Song Contests, Bingolotto that use this model by letting the audience influence the show by voting or taking part in a lottery that is broadcasted live (a deep kind

of interactivity, according to Deery, 2003). The kind of communication included in these situations has more the character of so-called false two-way communication (Sjölund, 1979) as the viewers' contribution of content is *highly formatted* – they are only allowed to interact by answering to questions. The many-to-many model that arises with the Internet provides new opportunities for interaction and also includes low-format interaction which comes closer to Sjölund's (1979) depiction of real two-way interaction, which allows for more mutual learning and closer relationships. Many companies use the Internet as a communication channel to increase customer involvement and customer interaction in business. This is especially popular in product development (e.g. Nambisan, 2002; von Hippel et al., 2002) and mass customization and personalization of products (e.g. Tseng et al., 2003). Yet, little attention is given in newer models of strategy or marketing to the possibilities to integrate customers more than has been done previously (Achrol, et al., 1999; Porter, 2001), although some, especially coming from the service management side, acknowledge the central role for customers in the production of value (Chase, et al., 1983; Larsson, et al., 1989; Normann, et al., 1994). This is in line with Toffler's (Toffler, 1980) discussion about *prosumers*. Toffler argued that the home would become the central institution of society, replacing the office and factory as a work center in the future. Tomorrow's society will be information-based and highly automated, and the TV would be a tool for increasing interactivity, making prosumerism possible since consumption in a future society is tightly coupled with production. Research made in customer relationship management (Nancarrow, et al., 2003; Stone et al., 2002) suggests increased customer communication, but to increase customer retention rates rather than to involve customers. On the development side, the use of customers as resources has been more common (Neale, et al., 1998; von Hippel, 1998; von Hippel, et al., 2002). Companies in e.g. the telecommunication industry (Magnusson, 2003) use sophisticated methods to involve customers in the product development process.

The common view is that customers only are parts of segments and receivers of produced value (Ramírez, 1999). When customers are organized, it is in interest groups such as *customer movements* (c.f. Olson, 1965). One sort of interest groups are *clans*, which Ouchi (1980) and Alvesson and Lindkvist (1993) point out as tools for collective actions to achieve joint ends. Alvesson and Lindkvist argue that they exist to reduce transaction costs in this ambition. For Ouchi (1980), clans denote common values, beliefs and traditions that are created through a socialization process. According to Alvesson and Lindkvist (1993) they are held together by common views and social relations. The authors distinguish between three different kinds of clans through the ties that keep them together; Economic-cooperative clan, Social-integrative clan and Blood-kinship clan. Closely related to, or even a form of, customer movement or clan are *customer communities* that have been the sweetheart of both academic and more practice oriented management literature (Balasubramanian, et al.,

2001; Hagel III, et al., 1997; Rheingold, 1994). Since a prerequisite for the forming of communities is communication, the rising popularity of customer communities is an effect of the introduction of the Internet that made it possible for people to connect with each other. Customer communities have most likely, however, existed for a long time with the identification of other customers that use the same kind of product.

In Muniz and O'Guinn (2001), there are three core components of a community; *consciousness of kind*, *rituals and traditions* and a *sense of obligation* to the community. Another way to put this is to say that the formation of community builds on an awareness of belonging to it, events that community members gather around, and an obligation to support the community by contributing to its reinforcement (e.g. acting in it). This is consistent to how Weick perceives groups to be formed (Weick, 1979). Using Weick's terms, the groups are enacted by acts of storytelling and routines. Without agreeing on or having a clear view of an end for the group formation, members settle around means for communication and action. Storytelling is a central vehicle for groups to make sense of the environment that they are in (Boyce, 1996; Weick, 1979) and is a central tool in the creation of a *storytelling organization*, by Boje defined as a "collective storytelling system in which the performance of stories is a key part of members' sense-making and a means to supplement individual memories with institutional memory" (Boje, 1991, p. 106).

Media companies have always served communities of different kinds, for which the archetype perhaps is the local newspaper's relation to the local community (Picard, 2002). Classic mass media, however, do not allow for interactivity (Luhmann, 2000). Still, they are central in community building as the media reinforces the creation of social ties. The social ties are built around a central phenomenon, for example nationality (Park, 1923) or an interest (Muniz, et al., 2001a). The media has an information brokering role in the creation (or reinforcement) of the community as it provides the knowledge about central activities in the community life – newborns, deaths, traditions, meetings and different kinds of identity creating information. Communities become an issue in a new respect as different media, in McLuhan's (1964) language, become "colder" (high in participation). The strengths of social ties arising in communities that are created through the media (and not only helped by the media) is debated (e.g. Wellman, 2001), but they do include many of the ingredients normally attributed to communities such as traditions, sharing knowledge and participation in the proliferation of the community. Deery (2003), assessing the increasingly colder television medium, finds that television programs that offer a parallel web channel use the Internet for *depth*, where the web's spatiotemporal vastness is being used to provide more information, and for *extension*, where for example extra footage or games are being offered.

The ways in which media companies involve customers include (extended from Fredberg, 2003):

- Polls
- Comments
- Direct questions on content
- Chat boards
- Debate articles
- New ideas for content
- Pilot program testing
- Citizen reporting ("Are you close to the accident? Call us!")
- SMS & telephone voting

The use of communication technologies in the production of media means that a product system of media is created. In such systems, the storytelling around the same phenomenon takes place through several channels. The storytelling also evidently becomes a joint effort, since two-way communication is included. Mass media researchers have addressed this question as an issue of how the analysis of audiences changes with the introduction of new technology (Webster, 1998). Deery's assessment (2003) of what she calls "participatory viewing" is fairly similar to customer involvement or integration in the media system.

Method

The research for this chapter was done in a case study of the production of the 2004 Swedish version of the reality television series Big Brother. The research project had two focuses: the planning and control of real time productions and the use of a multi media system in the interface to the costumers. To study the actual product development and customer involvement, the research took place during the period under which the TV series was produced (one interview was conducted after the production ended). Reality TV series are often seen as the lowest form of entertainment, and the critique against them has bee loud. There seems to be very few studies of reality TV series. Most literature to be found has a column character and addresses them as shallowly as the content of the shows themselves. In deed, the production of a series of Big Brother's character is produced under demanding circumstances—daily shows, 24/7 cable-TV subscriptions available, story develops during the rime of production etc, and involves customers extensively. The research project was an attempt to take a serious grasp on reality TV series and we chose to focus on the most loathed of them all, Big Brother.

Qualitative data was collected by means of open-ended interviews with seven persons involved in the central management of the production of Big Brother Sweden 2004. The Big Brother TV format is owned by Endemol, one of the world's largest format developers. Kanal5 has the Swedish broadcasting rights for the show and ordered the production from Meter Film & Television.

Meter is included in Metronome Film & Television which is owned by Norwegian media conglomerate Schibsted (65%) and Endemol (35%). Everything outside the TV-production (e.g. web site, voting by SMS) was put in a separate holding company, Big Brother KB, owned by Metronome and SBS (the owner of Kanal5). The CEO of BBKB, Eva A, as well as the head of web services, Marcus J were interviewed. Two of the respondents, the program manager Johan W and the project manager Sara G were from Kanal5. Sara G's responsibility was to supervise the production of Big Brother. Three respondents were contracted by Meter and belonged to the top management team of the production. They were the producer, Mattias B, the project manager Sanna G and the line producer/head of casting Matilda S.

The persons were selected out of their roles in the central management of the TV series. Interviews were held at the production site and lasted up to two hours each. The interviewer made notes about the answers and all interviews except one were recorded. The interviews were all transcribed and analyzed systematically. The questions departed from the production itself and used examples from the on-going production to grasp complex issues that the management team (both at Kanal5 and Meter) dealt with. A choice was made to work with a combination of induction and deduction, in which the researcher creates intermediate theories during the time of study on the basis of observations. According to this method, new observations are continuously tested for consistency against the intermediate theory, which is also developed with each observation added. During the studies, the intermediate theories become structured and are saturated with regard to the empirical data gathered (Alvesson, et al., 1994, calls this *abduktion*). This systematic approach, being widely practiced in qualitative research, has also been argued for recently in highly respected journals (Gephart et al., 2004). The collective description emerged continuously and the interpretation of the data was validated. The respondents had a concordant view which made the use of an intermediate theory uncomplicated. A research seminar was also set up at the end of the research project with the program manager, Johan W, and the supervisor, Sara G, to test and develop conceptual models.

Big Brother 2004

Big Brother basics: a number of people are filmed and shown in daily TV shows as they live isolated in a house for a number of days. They are voted out one by one by viewers during the time of production. Big Brother takes similar forms in different countries, but the examples here are taken from the Swedish production of Big Brother 2004. In this particular case twelve people walked into the Big Brother house at the end of January, 2004. After 108 days, one winner was selected through viewers' votes and walked out with SEK 500,000 (just under € 55,000). In the house, 48 microphones and 31 cameras were installed. The production team pointed out that it is a central ingredient of the

format that the participants are kept under complete surveillance. No corner of the house should be out of sight for the cameras. To ensure that there would be some activity in the house and hence that there would be something to build a television show on, the participants were given assignments to fulfill. "You have to be aware of that the participants might just sit around and eat an egg for ten minutes", Johan W, the program manager of Kanal5, said. What assignments they would be given was decided by the producer Mathias B, mainly on short notice on the basis of the amount and quality of actions that took place in the house.

This section aims at describing the system of different media channels, often building on interactivity, around Big Brother. In this system, the daily televised airtime is only a small part. Even though the observations in this article are taken from the Swedish 2004 edition, the show has gone on for many years in several countries (this was the fourth Swedish version), so the results may be general for several editions. They do serve as an example of the management of a reality TV-media system.

The production staff produced material for several different media products and services, as can be seen in Table 1. Products and services included in table should be understood as contact points between the producer and the audience; therefore, SMS-voting is seen as a service, even though the customer does the work. To come past the issue of wording, the term channel is used for both products and services.

Table 1 shows that the produced material was far from restricted to the traditional television channel. The storytelling about the actions in the house took place in all the channels that were offered by the production team. The creation of the media system of Big Brother was not limited to these channels, however. The media that could be consumed formed the basis for channels of interaction that were only partially in control of the production team, but just as important for the creation of the media system. Such was the coverage in the tabloid press and the storytelling among customers both offline (here called coffee table production) and online (web chat and discussions).

According to the interviewees, there existed no formal agreements of cooperation between the channel and the tabloid press, but:

> *All commercial TV channels have a non-official, but intimate relationship with the press. The reality TV shows have been very useful here, because they are broadcasted with the same rhythm as the newspapers. The formats we broadcast are very tabloid to their character. (Program manager Johan W)*

Before the participants entered the house, they gave a press conference. Small pieces of possible news were "leaked" from the production team to journalists who were allowed to make interviews with the participants. The

Table 1. Different Media Channels Produced by the Big Brother Production Team

Media format	Channel
TV	- a 45 minute TV show Monday through Thursday, in the team lingo called the "Reality". - reruns of the "Reality" each day, and a 2 hour special on Saturdays - a 2 hour talk show each Thursday with a live audience, where participants in the house are nominated by their fellow inhabitants and voted out by viewers, either through SMS or by phone calls - a weekend special each Sunday, produced in the same way as the "Reality", based on the happenings in the house - a kick-off program in which the participants entered the house with a live audience outside. The program was produced as a gala with music performances. People in the audience needed tickets for the show - a Grand Finale in which the winner was selected. This was also produced as a gala outside the house with music performances and audience interviews, and comments by former participants. Also for this show, people acquired tickets. - a 24/7 cable TV service constantly sending pictures from the house to which people could buy subscriptions
Web	- a chat room service where viewers chatted with each other - former participants or participants that have been voted out were available for chat debating forums - "news" from the house, published every hour - personal facts about the participants - possibility to send mail to the participants, of which some were read out loud in the Thursday talk show (the participants received all the mails sent to them when they left the house) - a news ticker service that viewers could install on their desktop. If something deemed of special interest happened in the house, the viewer was alerted through the service - a digital newsletter - 24/7 live web camera from the house (available for subscription)
Phone	- SMS voting services - SMS services that functioned in the same way as the news ticker service - Phone voting services - Live broadcasting of the show in third generation mobile telephony phones
Other media	- a Big Brother theme song was recorded by a pop artist and publicly released - the participants recorded their own song from the house. Also this was publicly released in a Big Brother CD - a Big Brother DVD purchasable through the web page

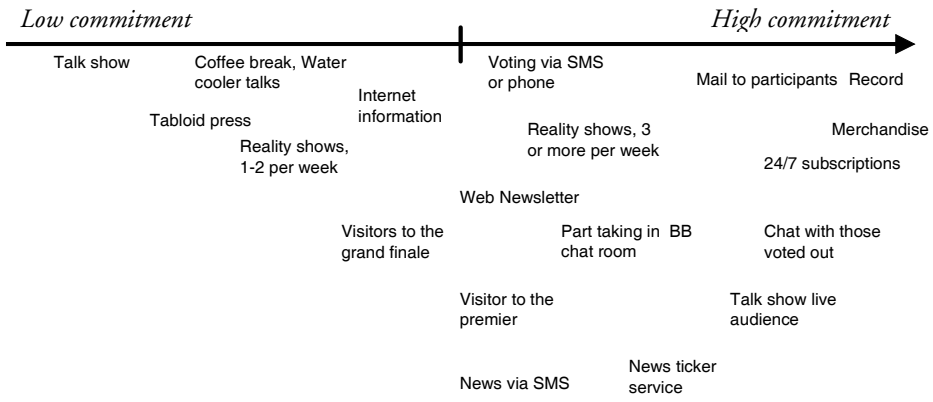
pieces of news were not published the day after, but after some weeks or months, when the participants had become known to the public. The tabloid press coverage was very important to invoke conversations in areas of social interactions. Production of the show, via storytelling, took place also in these

meetings among people, for example at the coffee table or water cooler where they would talk about the show and its participants, rage over the immorality of the show as they would read about it in the press, etc. It may be important to note that the producers of the TV show could not exercise much influence on these debates other than providing wood and sparks for the fires to keep them burning. An important ingredient in keeping up attention was to choose the "right" participants. "After all, how interesting and fun people are determines if the series becomes successful or not", said Sanna G, project manager of the production. In accordance with this, the casting process was handled cautiously, not only to have participants that would create an interesting "story" together with others, but to have participants that would create attention in other media. If the casting turned out well, this drastically reduced the need to exercise control over the actions in the house by giving the participants assignments, according to Matilda S, line producer of the production. The urge to get attention stood against the risk of being perceived as too cheap; "You could say that all press is good press, but there is always a risk of becoming trashy", said line producer Matilda S.

The production through social interactions in physical settings was of natural reasons hard to monitor from the producer point of view. The digital counterpart of the "coffee table production" can be said to be the internet discussions around the production. A customer that had watched the daily reality show might find it important also to take part in the discussion on chat afterwards. The internet discussions both took place in discussion forum and chat room provided by the Big Brother production team at www.bigbrother.se, and in other sites, such as the well frequented discussion site www.alltomtv.se, a reality TV fan site in which scandals leaked out. The production team argued that instead of trying to influence the debate in such forums, it was useful to learn to react to the debate taking place or monitor the debate. This information could be used to improve the TV show. At one point some fans chatted about possible future assignments for the participants. The production team decided to put one of the ideas into practice. Only some minutes after this was sent on the television, the assignment and the fact that it was created by the fans were discussed on the chat.

As has been described above, Big Brother was not only consumed via television. There was a mutual dependency between the different media channels, as they fed back attention to each other. The Big Brother production offered several other ways for its audience to consume the program. Together, they created the "Big Brother world"—the media system in which the house and the participants were in the centre. In this system, the channels were mutually dependent. The structure behind the media system did not only build on the mutual dependency. They were also meant to contribute to an increased level of commitment among the customers. The different channels in the system corresponded to different levels of commitment, as described in figure 1 which was created by the program manager Johan W and the supervisor Sara G

during a research seminar. As can be seen from Figure 1, the producers offered a multitude of channels that corresponded to a high level commitment. Hence, there were always opportunities for customers to engage more and more in the show.



Source: Created by program manager Johan W and project supervisor Sara G at research meeting

Figure 1. Different Channels of Interaction and Their Corresponding Levels of Customer Commitment

Increasing to the right in figure 1 is not only the level of commitment but also the revenue from the customers. There was hence an incentive for the producers of the show to pull people deeper into the system. Customers with a higher level of commitment were of a greater value to the producers, not only as they would spend more money through the purchase of subscriptions or voting, but also indirectly as they were more exposed to advertising, and directly as they were a sort of "expert consumers" through which knowledge could be gained as for how to develop the show.

Analysis and Discussion

For the Big Brother case, the product is the whole system of media, of which the daily television show is only a minor product. Of this reason, it is fair to say that the model differs slightly from traditional models in marketing, where the goal is to create an augmented product through adding services and extras (Kotler, et al., 1996). Here, the whole system is the product. The core component are the actions in the house, but the value-creating system (Normann, et al., 1994) is much larger than this. Since the production of the

whole media system involves also the customers and they are indeed involved in the system which is continuously being produced and renewed, it is fair to speak about customer involvement in a whole system rather than in a few functions (as in product development). The commitment of customers on different levels also results in an organization of customers where the interaction with the customers about the whole product is the crucial issue (c.f. Toffler, 1980). Since the value co-production from the customers' side is such an important part of this system, value is primarily produced outside the control of the firm. It is interesting to compare this kind of model (as Normann, et al., 1994, for example do) with Porter's (1985) value chain analysis. The value chain model is not applicable in the same way in a system where customers co-produce content and contribute to the storyline. It is implicitly assumed in value chain model that customers consume, destroy, the value that the company has created, rather than that value is created when the product leaves the company's borders (Ramírez, 1999).

The media system built not only on the communication between the production and the customers, but also on the communication between customers. Through this interaction, social ties and hence a *community* may be formed. The producers of the show helped to fuel interaction by offering services that were continuously updated, not only everyday, but every hour through the "news" published on Big Brother web site and continuously through the 24/7 subscriptions. People taking part of this information were one step ahead of their peers during coffee breaks or water cooler talks, Johan W, the program manager of Kanal5 argued. In the words of Balasubramanian and Mahajan (2001), the customers increased their *social interaction utility* by increasing their knowledge about the program and its participants.

The social interaction utility is dependent on the quality of the communication. The production team provided tools for the interaction between customers. The communicative quality is also an issue for the relationship between the producer and the customers. Even though two-way communication was included in the case of Big Brother, most of it is so-called false two-way communication (Sjölund, 1979). The partaking and involvement of customers in the actual show was primarily facilitated through the voting out of participants that they did not like. They could also influence the experience of Big Brother by taking part in discussions in the home page (in Deery, 2003: shallow interaction). Not all interaction between media companies and the consumers of media products today are such that the companies communicate in real terms. This is the case for polls or telephone voting, for example, where interaction takes more the form of reactions than true communication. Research in psychology points to the fact that the quality of interaction, the following relation between the parties and the possibilities for learning increase the closer to real two-way communication two parties get (Sjölund, 1979). In one case the producers allowed customers to influence the assignments given to

participants, which is closer to real to-way communication and a deep form of interaction, according to Deery (2003).

The coming of new ICT technologies provided great hopes for the creation of new media. The harsh advertisement business cycle created demands for new ideas and management innovations in the media industry. To create new forms of business offers to an increasingly fragmented audience (Biltereyst, 2001), media firms have tried to combine different media channels, hoping that the combined offer would create a greater whole than the sum of the parts. There seems to have been two major problems with this. First, the technological issues have not been easily solved. An example is that it has taken a very long time for newspapers to find publishing systems that allow them to automatically transfer texts from the paper-newspaper to the electronic version. Instead, a copy-paste-solution has had to do in many cases. The second problem is organizational. The text-sound-picture producing parts of media companies are traditionally to be seen as professional organizations (Kärreman, 1996). In large media conglomerates in possession of several media companies, the single companies often enjoy a high degree of independency towards their owners. The examples of how media conglomerates have failed to create an integrated solution includes the giant Bonnier project "Koll" which lacked the support from the contributing organizations and therefore never became the multimedia meeting place that the Bonnier executives wanted it to become. It is likely that the young commercial TV channels in Sweden (the oldest of them is less than 20 years old) is less affected by the organizational issues that influence the actions of for example newspapers. Of this reason, they might have been more adaptive to taking in alternatives to the traditional production.

Conclusions

This article has dealt with the organization of customers in a media system. The different channels of interaction were used by the producers to pull people inwards in the system. The background intention was to describe the use of several media channels in collaboration to understand how a media system can be built up. The case of Big Brother served as an example for what reality TV series do that contributes to their success. Deery (2003) argues that reality TV series use the logic of the Internet and that they therefore are particularly successful in creating interaction. Hence, there might be possible learning to be made from this case for other kinds of media productions.

When customers are involved in the system which is your product, you are likely to have a closer relationship to them, which can benefit learning and sustainability in customer relations and through the incorporating customers deeper in to your system, also profitability. More research and more cases are needed to further deepen the understanding of the value and possible leverage of customers in organizations, or perhaps also customer *as* organizations. Coming back to the most popular TV shows in Sweden, the top programs

during 2004 (Allt_om_Media/mms.se, 2005) were reality TV series (3/25), sports events (13/25), the Eurovision Song Contest (6/25) and a Swedish musical quiz show called "Så ska det låta" (2/25), based on the Irish program "The Lyrics Board"[30]. All of these TV-phenomena are based on people watching together and being able to share interests. The reality shows have been described already, sports events gather an enormous public of sports interested often gathering to share the fates of the idols, the Eurovision Song Contest has become an event for which people bet with each other and make parties around, and in "Så ska det låta", the main point is that everyone in the program ends up singing together, and people at home can join in. According to Deery (2003) this is how TV worked in the first part of its history. Hence, to a certain extent, the community building and its supporting system of channels is a natural heir to the TV-medium as such.

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Integration Strategies of a Niche Communication Company: The Case of Gambero Rosso

Benedetta Prario
Giuseppe Richeri

This chapter presents the case of Gambero Rosso, a still small communication firm operating in a thematic industry that can be labeled food and wine. This case has been chosen for the dynamism showed in the last years. As we will see, the firm has adopted an expansion strategy on three different levels:

1. horizontal, creating ventures in foreign countries;
2. vertical, backward integrating phases of the value chain, and
3. diagonal, launching activities in media sectors different from the original one.

From the newspaper publishing sector, Gambero Rosso moved to the book publishing and, expanding abroad, to the television diffusion, audiovisual production and to Internet. Recently, the firm entered the creation of media events and formation's activities. All these activities have been treated not only with an informative, but also with an analytical and critical slant in all the different aspects related to food and wine: from the connoisseurship to the traditional and innovative refreshment, from the wine's production and distribution to the creation and certification of quality parameter.

This case is significant for 3 major reasons. Firstly, Gambero Rosso shows how successfully the strategic models of the big media groups can be adopted to describe the behavior of little firms having a low turnover (Doyle, 2002). Consequently, to create horizontal, vertical and diagonal expansion strategies there is not the need to reach a relevant critical mass. Secondly, operating in a thematic niche through different publishing initiatives, Gambero Rosso has innovated the way of dealing with topics, media, languages and targets within that niche. The third reason regards the ability to integrate the core business activity of a media company with other businesses concerning the events' production and the education at different levels of specialization.

Over the years Gambero Rosso has been transformed from a media company to a knowledge company, as its core business has become the production of knowledge concerning food and wine. These issues are exploited through different media and synergic activities, so that "economies of multiformity" are realized (Albarran & Dimmick, 1996). In this prospective

Gambero Rosso has not limited itself to launch one or more initiatives in the media industry, but it has done more. First of all, it gave importance to food & wine components that did not have media relevance before. It highlighted the people behind famous restaurants, the chefs, and it created around them an entrepreneurial and cultural prominence. It made comparisons between them, telling about their life and underlining their education. The same thing has been done with the wine producers, emphasizing how it is important to unify technical competence and commercial qualities. In both cases—chefs and wine producers—Gambero Rosso has introduced variables never taken into consideration, such as the ability to test, to invent new combinations and tastes, to apply scientific knowledge and innovative techniques (like the wine-making experts), and the ability to gather the connection between the products' development and new trend of life style. In this way the firm gives a "cultural and professional emphasis" to activities which have never been object of a systematic attention before.

The first step was to thematize an activity field and to transform it into a media subject.

Gambero Rosso was a widespread publication edited as an insert of a left-wing newspaper. However, the contrast between food and wine issues, far from the political and social commitment, and a newspaper addressed to left-wing militants gave visibility to the initiative within broader environments than the traditional readers of the newspaper. To follow food and wine issues periodically, these readers were prepared to buy a journal without sharing its political ideas.

As a second step, after reaching a good level of fame and a faithful target, Gambero Rosso became an independent publishing company with a specific identity and distribution. In a short time, it turned into a publication addressed to specialists of food and wine and to a generic public interested in improving their knowledge and ability of choice in this field. This public transformed the issue of food and wine in a conversational topic enhancing social relationships.

After some years, around Gambero Rosso emerged a community of producers, professionals and consumers interested in food and wine from a cultural and social perspective. This community was ready to use different media related to the issue: from gourmet guides to yearbooks with the wine's classifications, from Internet to television. Around the television business the audiovisual production specialized in advertisement and commercials of food and wine products developed.

As third step, Gambero Rosso diversified its business in foreign sectors, localizing some publishing products (this is the case of the wine's yearbook) or selling their exploitation's rights (this is the case of audiovisual products). But until now it does not seem that all the potentialities have been already exploited, due perhaps to the absence of the economic, the organizational and entrepreneurial requested dimensions. The last step concerns the creation of a large infrastructure addressed to three specific and integrated activities. The first

one is the organization of events regarding the connoisseurship (public tasting of products, public preparation of foods by famous chefs, etc) in dedicated spaces. The second activity is the audiovisual production and broadcasting from specialized studios able to transform public events into media events, too. The last one is the education activity in different fields: from the kitchen with various levels' courses (from amateurs to professionals) to the formation of journalists specialized in food and wine.

All these activities have been driven by a specific strategy aimed at consolidating and expanding a public of professionals, specialists and amateurs. This public has already assumed the form of a community using a variety of print and audiovisual media, diffusive and interactive, distance media and live media.

The core business is the production and the setting-up knowledge in the thematic field of food and wine using different spaces, media and languages that allow to better exploit synergies and economies of scale and scope.

The following pages illustrate the main phases of the development of Gambero Rosso and analyze its activities.

The History of Gambero Rosso

Gambero Rosso made its debut at the end of 1986 as the title of a supplement of the left-wing daily newspaper, *il Manifesto*. It was a supplement of 8 pages dealing with food and wine connoisseurship. Created by Stefano Bonilli and graphically made with care, Gambero Rosso represented a total novelty, because it was the first time that a political daily newspaper assigned such a wide space to a frivolous issue at that time unrelated to the committed culture.

This initiative, initially accompanied by skepticism and polemics (because of the frivolity of the subject), had a great success since its first number. At that time the only Italian competitor of Gambero Rosso was the monthly magazine *La Gola*, dealing with the same issues, but in a more intellectual and cultural way.

In 1987 the publishing house with the brand Gambero Rosso was created. This company began its activity with *Vini d'Italia*, a guidebook of the best national wine production that in only a few years became the reference book for wine lovers. The value system of the "Three glasses" (symbol of excellence) is now a sort of codex, a standard to measure wine quality and a way for consumers, restaurants and wine shops to choose products. In the following years the guide will have German and English versions, too.

In 1989, due to the good results of the supplement of *il Manifesto*, Gambero Rosso became an independent monthly magazine of 48 pages sold together with the daily newspaper. Following the success of the wine's guide, the now publishing company Gambero Rosso launched the *Guida dei Ristoranti d'Italia*, introducing with it a particular hundredth value system for restaurants based on four items (kitchen, wine vault, service and atmosphere). Reviewing Italian

restaurants, this guide has now become a reference book in the sector, too. Further, Gambero Rosso edits the *Almanacco del Berebene*, an annual guidebook dealing with wines whose price is lower than €8, and the guide *I Vini Intelligenti del Gambero Rosso*, a review of 500 delicious wines selected in relation to the quality and the price.

The guides of the main towns dealing with restaurants, pizzerias, small restaurants (trattoria), grocery shops and hotels represent an addition to these publishing products.

In 1991, the publisher group *L'Espresso* acquired the brand Gambero Rosso. Carrying out an expansion project in this sector, the company forecasted big investments in the next three years. The idea was to unify the Gambero Rosso's guidebooks with the already famous and well diffused *Guida Espresso* and to maintain the monthly magazine *Gambero Rosso* as a complement. However, after a short time, the outcome of the new initiative was disappointing and the accumulated deficit was so high that the Group decided to change strategy, dropping off the project of expansion in the sector. Gambero Rosso was sold for a lower value than the purchasing price, to its creator Stefano Bonilli. He was a journalist at *il Manifesto* and the brand director when Gambero Rosso was acquired by the group *L'Espresso*.

In 1992, after five years, Gambero Rosso became an independent publishing group owing a monthly magazine of 116 pages and the connoisseurship guides. The issues were always food, wine, and gourmet tourism, all of which presented and evaluated in relation to their quality and price.

In the following years, Gambero Rosso launched *Gambero Rosso Wine, Travel & Food*, an English quarterly review edited in the United States. Its aim was to initiate the Americans to the Italian kitchen, to its receipts and its famous wines. Nowadays, it is possible to find this review in newspaper kiosks, in bookshops and by subscription in the States, Australia, Great Britain and Canada.

Between 1993 and 1995 Italy was in difficulty due to the negative economic cycle and to a broad political indecision (as an effect of the Tangentopoli scandal). The situation negatively influenced Italian consumption and, in particular, the consumption of not indispensable articles. Consequently, there was a minor inclination of people to high gourmet products. This situation brought inevitably to a diminution of advertising and sales in general and consequently for Gambero Rosso, too.

In July 1997 one of the first Italian web sites dedicated to food and wine was launched: www.gamberorosso.it. In a few months, the site became a reference point for "greedy and curious" surfers.

Today Gambero Rosso operates in the television sector, too. In fact, in 1999 it launched the first Italian thematic channel dealing with food and wine connoisseurship, Raisat Gambero Rosso Channel. Produced with Raisat, a venture of RAI, the public Italian television broadcaster, the Channel is part of a group of seven thematic channels edited and transmitted on the digital

satellite platform Tele+, now Sky Italia. Today it is one of the most successful satellite channels. The rating for the channel in prime time every week is around 450,000 viewers.

In 2001, Gambero Rosso further diversified its supply entering the advertising industry: the Group decided to promote its products by itself (for example, television channel, books and guides) and the products of clients.

Finally, in 2002 Gambero Rosso invested €10 million in the construction of the so called *Città del Gusto*, a six levels building in Rome, where the television studios for the production of the channel's programs and the advertisement are located. *Città del Gusto* is the venue of the education activities and various events, too. In particular, there are cooking classes, courses addressed to journalists specialized in gourmet, and conferences.

Today Gambero Rosso is a well-known brand all over the world. The greatest common denominator of all its editorial, educational and promotional activities is the capability to exploit the big Italian agro-industrial estate and catering as well as to identify the cultural value of the issue. Gambero Rosso is today the leading brand in the connoisseurship sector, becoming the password of lovers and experts who want to learn how to travel, eat and drink with taste and intelligence.

Summing up, Gambero Rosso is an economic group with diversified activities within the communication field, including:

- the monthly magazine of "greedy and curious consumers" that since 1986 has been analyzing and describing a lot of connoisseurship novelties addressed to food lovers and skilled people;
- guides of restaurants, products, towns and hotels. The Gambero Rosso value system of the "Three glasses" has become the measure of Italian wines at international level;
- the web site www.gamberorosso.it, which has become a meeting point for a community interested in and informed about all thematic novelties;
- the Raisat Gambero Rosso Channel, the digital thematic television channel of the satellite platform Sky Italia that supplies a programming specialized in food and wine;
- a television production centre equipped with studios for shooting commercials and specialized in events and activities related to the preparation and presentation of food;
- *Città del Gusto*—the only town founded on the taste—where all the educational activities (for journalists, professionals and amateur chefs) and the promoting activities linked to connoisseurship take place.

The business of Gambero Rosso can schematically be represented as following (Figure 1):

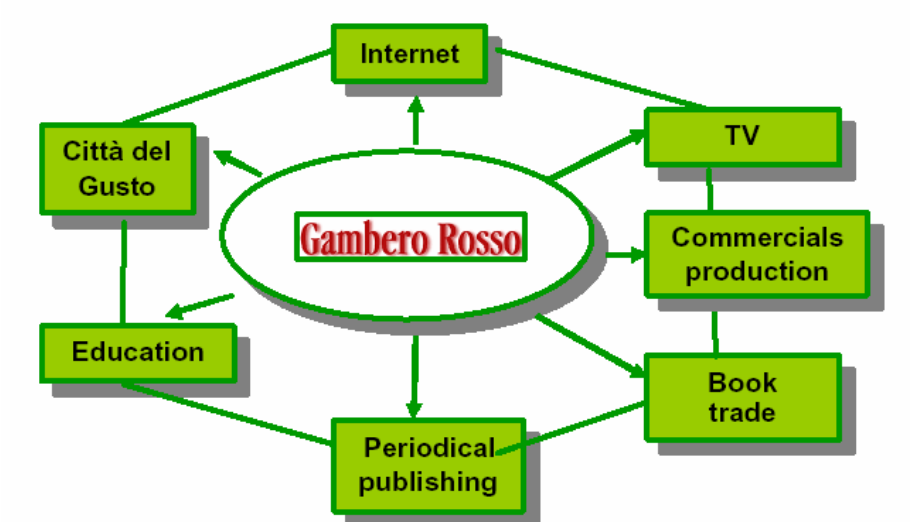

Figure 1. The Business of Gambero Rosso

Business Activities

Nowadays, Gambero Rosso is the only communication group in Italy that has developed a multimedia integrated strategy, specialized in a well defined field like the gourmet one and articulated in editorial, television, educational and cultural activities. In the following sections we will briefly describe these activities.

Publishing

The main editorial products are: *Gambero Rosso*, *Vini d'Italia*, *Ristoranti d'Italia del Gambero Rosso*, and the tourist guides of the most important Italian towns.

Since 1986 "the monthly magazine of greedy and curious consumers", Gambero Rosso, has been following the evolution of Italian and European gourmet, illustrating the trends.

Totally renewed in the graphical and content aspects, the magazine is divided in detailed lectures and spreadsheets about wines and restaurants, receipts and itineraries. It is a rich and well made product that gives to the reader good suggestions, contacts and information linked to gourmet and everyday life. In 2003 its privileged target, as mentioned by the last Eurisko survey, were readers between 25 and 54 years old.

In 2003 the magazine had a diffusion of a bit more than 42,500 copies, a figure which increased by 20% in April during the *Vinitaly*, the international

wine exhibition taking place every year in Verona. The main distribution channels are bookshops, newsagents, large-scale retail trade and exhibitions.

In 2003 the turnover of the monthly magazine Gambero Rosso was almost 600,000 Euros (see Figure 2), confirming the negative trend created by the general contraction of advertisement funds after the September 11.

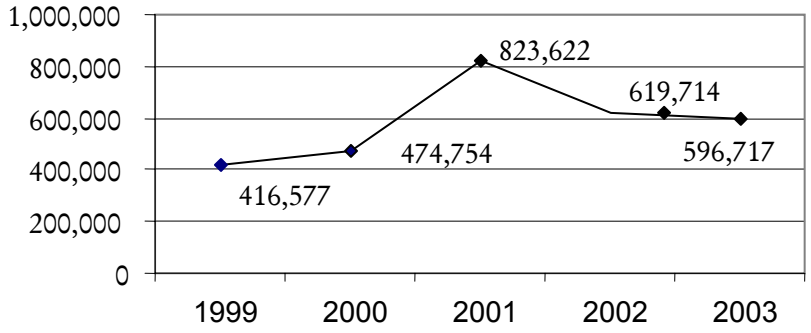

Figure 2. Turnover of Gambero Rosso (1999-2003), in Euros

In the last five years the turnover of books and periodicals of Gambero Rosso (Figure 3) presents a growing trend (+56%), even if in the last year it registered a decrease that moved the turnover of 2003 to €1.88 million.

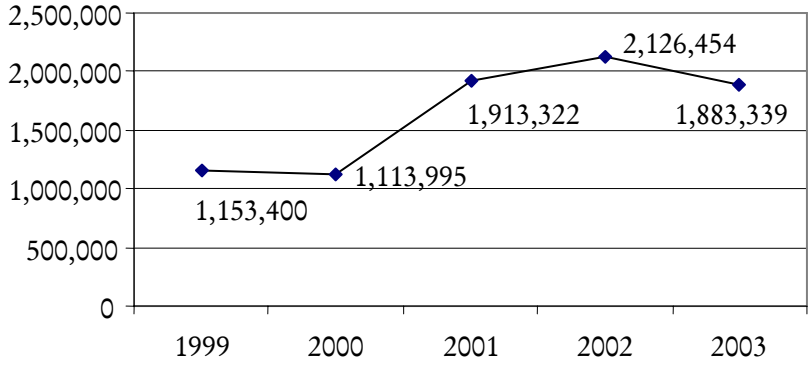

Figure 3. Turnover of Books and Guides (1999-2003), in Euros

The other main editorial products of the Group are *Vini d'Italia* and *Ristoranti d'Italia del Gambero Rosso*, that in year 2003 respectively sold 85,000 and 82,000 copies respectively.

Vini d'Italia, published by Gambero Rosso and *Slow Food Editore*, is the leading guide of Italian enology and is enriched and revised every year. Reviewed are around 1800 wine's producers and more than 12 thousands wines, evaluated with the system of "The Three Glasses". This yearbook presents regional introductions and specifications comprehensible by everyone, without using a too technical register.

For its part, *Ristoranti d'Italia del Gambero Rosso* is the most detailed map of Italian restaurants, articulated in 800 pages and 2600 mentions of different typologies of restaurants, pizzerias and wine bars. The reader can find different typologies of places.

In both cases the main distribution channels are bookshops, large-scale retail trade and exhibitions.

Internet

As we have seen, Gambero Rosso operates in the Internet industry, too. Nowadays, there are 150,000 subscribers, who daily exchange their opinions in the forum and who represent an attentive community. Gambero Rosso created a card for Special Subscribers of the web site and the possibility to request the Visa Electron credit card "Gambero Rosso Card" (€56) that presents special offers, promotions, booking and purchasing of products and services.

The main advantages of the Special Subscriber are:

- login for the community of the web site www.gamberorosso.it ;
- 12 numbers of the monthly magazine Gambero Rosso;
- 30% discount on the events organized by Gambero Rosso;
- 20% discount on the kitchen and wine courses;
- 15% discount on the Restaurant Gambero Rosso;
- 20% discount on the full-dress dinner of Gambero Rosso;
- 15% discount on the purchase of the Gambero Rosso books in their bookshops;
- 30% discount on the purchase of the Gambero Rosso books on the web site www.gamberorosso.it.

From 1999 to 2003 the revenues coming from Internet had an uneven trend (see the following figure) reaching in the last year around €66,000 (Figure 4)

Città del Gusto

As previously illustrated, in the Città del Gusto it is possible to eat, drink, but it is also possible to attend classes and to take part in events and discussion forums

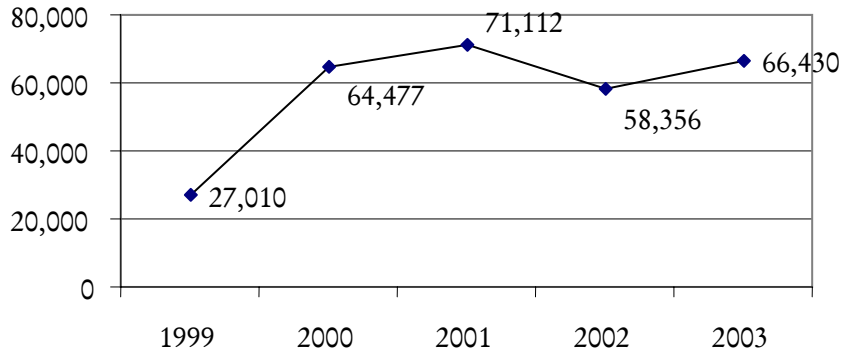

Figure 4. Internet Turnover, 1999-2003 (in euros)

about connoisseurship. To allow a multimedia use of all activities taking place in the different spaces, the building is all cabled. The Città del Gusto of Gambero Rosso can be considered as a real "audiovisual content firm". Besides two technologically advanced television studios used to produce the channel scheduling, the building has areas assigned to cooking courses targeted to general public but also to skilled persons. There is also a part assigned to a bookshop where customers can buy all editions of Gambero Rosso, but also high quality connoisseurship products, cooking books and gourmet products. There is also a so called "kitchen theatre" and "wine theatre" realized as an amphitheatre and furnished as a 9th century theatre. In these places the best Italian and European chef troupes cook for the public that takes part to the preparation of the receipts and who tastes different high quality wines. Both theatres can be transformed in conference rooms.

The growth of the turnover from the first and the second year of all activities related to Città del Gusto is considerable: it moves from €358,000 to just over €1.77 million in 2003. Città del Gusto, as said before, deals also with education, offering a Master in gourmet communication and journalism. The turnover of this activity was in the last year €258,000.

Advertising Production

With the collaboration of Interact s.r.l., Gambero Rosso produces advertisements and billboards, too. Since 2001, thanks to its structures and technologies, Interact has been supplying the advertising department of Gambero Rosso with a service able to create an advertisement in all its phases, from the planning and editing to the broadcasting.

Television

Last but not least, Gambero Rosso is active in the television sector, too.

Gambero Rosso entered the television sector in 1998, when Raisat, a RAI venture responsible of the free and pay-TV television channel transmitted via satellite, created a thematic channel dealing with food & wine. Gambero Rosso Channel daily broadcasts for 4 hours an original programming regarding food & wine's topics. The editorial staff, composed by employees of both firms Gambero Rosso and RAI, has the responsibility of the programming, but Gambero Rosso holds a contract for most of the productions.

Gambero Rosso publishing collects a part of the television channel's incomes, creates many programs that, as supplier, offers to the Gambero Rosso Channel company, manages an advertising dealer, creates many advertisements and collects part of the rights coming from the selling of thematic programs addressed to foreign broadcasters.

The programs and events' creation lively shooting, which since 2002 has been done in the Città del Gusto, allows the acquisition of "knowledge" to be exploited in magazines, guides and other publishing activities.

Since its launch, the television initiative has reached a good success. However, it has been influenced by the slow penetration of the digital satellite television in Italy, which reached more than 2 million subscribers in 2003 and 2.7 million in 2004.

The main advantage of this channel, compared with other satellite thematic channels, is the fame and visibility of Gambero Rosso. In fact, it has already created a keen public that usually reads its magazines and guides and uses the Internet, too. It is important to remember that in Italy, thanks to the diffusion of the slow food in contrast with the fast food style, the interest in connoisseurship has been strengthened during the last years.

The Channel reaches around 450,000 habitual viewers, that is, people who watch its programming at least once a week. Referring to a survey conducted in the first half of 2004 by Makno, a company specialized in media research, the audience has the following features:

- young adult: 55% of the audience is between 25 and 44 years old;
- 50% are females and 50% males;
- it has a middle high school education: 75% has a high school or college degree (17%);
- it was already interested in food and wine topics before the launch of Gambero Rosso Channel (60.4%);
- it gives importance to the research of genuineness and quality of gourmet products (84%);
- it is willing to pay a lot for high quality products (86%).

This synthetic audience description emphasizes that the channel addresses an "established" public already interested in food and wine information and that watches the channel to improve its competences and its consumption in the field.

The most relevant economic data concerning the television channel regards the progress of advertising as showed in the following table (Figure 5):

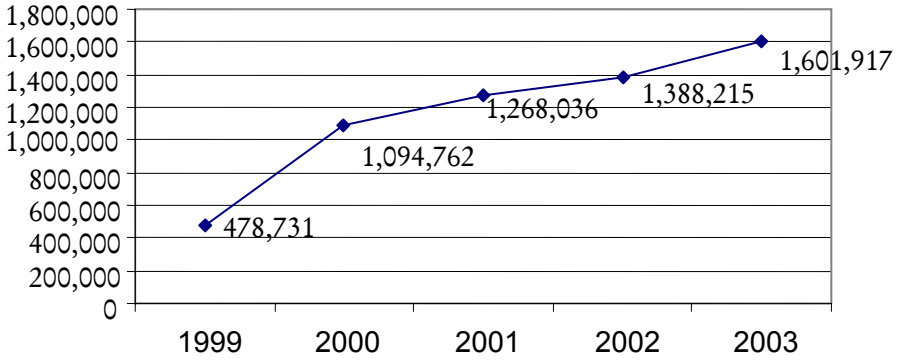

Figure 5. Turnover of Advertising Channel, 1999-2003 (in euros)

The Mission

The entrepreneurial orientation of the Group is represented by its ability to transform the "well living" passion in a business. The idea of "well living", which widely spread among Italians in recent years, stands for a good-quality life-style, with main reference to the exploitation of free time. More precisely, its aim is to offer to a well-read and critical public the best proposals for leisure time, suggesting the following choices:

- gastronomic
- enological
- touristic
- cultural.

According to the different products offered and the various sectors where it is active, Gambero Rosso has different targets:

- the producers and firms in the connoisseurship sector
- the viewers of the thematic channel Raisat Gambero Rosso Channel

- the readers of magazines and books
- skilled persons and lovers of Italy and its products.

Conclusion

It is now possible to identify some key success factors of Gambero Rosso.

First of all, its promoters have been able to identify a still not completely exploited communication sector, giving to its content a cultural relevance. In this way, they have transformed the knowledge and the information about the food & wine field into an element of identity, characterizing a specific life style.

The second key success factor is the ability of Gambero Rosso to link to this new field a powerful brand, known as a certification brand (especially for wines) thanks to the objective behavior assumed by Gambero Rosso with the wine and gourmet producers who often are advertisers within Gambero Rosso's titles.

Indeed, Gambero Rosso created a unified management of know-how regarding food and wine events and expert people. From this knowledge emerge all data, elements and information needed to create the different products.

Thanks to its editorial products and other activities, Gambero Rosso has also been able to create a professional spirit recognized by many people active in the field of the connoisseurship of wine's production. Before Gambero Rosso a shared identity, an identifiable community within this field did not exist. Gambero Rosso raised to nobility a job, which belongs not only to material work but also to culture.

With the launch of the television channel, Gambero Rosso created one of the most important international television stocks representing nowadays a strategic asset of the group. For this purpose it could rely on the narrow collaboration with RAI, which has size, financial and promotional capabilities, unreachable for a small and new company such as Gambero Rosso.

Another key success factor regards the direct management of the advertising dealer and the opportunity to offer to the advertisers a variety of communication tools that favor the creation of promotional campaigns according to the advertisers' needs.

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The Changing Structure of Media Organizations and its Meanings during the Transformation of the Social and Economic System in China

Xin Xun Wu
Ji Yin Chen

After the transformation of the economic system from a planned into a market economy, the organization of media companies has been changing a lot in China. In particular, the leadership structure of newspaper companies changed. At first, the chief editor and the owner were managing the business together under the supervision of the Chinese Communist Party (CCP) committee. Afterwards the chief editor became the leader and general manager of the company, always under the supervision of the CCP committee. The key element of the change relies on the higher stress laid on management, which gained equal importance than the editorial side of the business. The organizational structure of the television industry changed more or les in the same way. However, the organizational structure of the Chinese media industry altogether still needs to explore alternatives to benefit from the transformation of the economic system and its further reforms. In this paper we will describe the major impacts of the economic transformation on the organizational and leadership structure of the Chinese newspaper and television industry.

The Organizational Structure of Newspaper Companies and its Meaning during the Planned Economy System (1949-1978)

As we all know, the planned economy system represented the main economic system in China from the foundation of the people's republic of China in 1949 till the year 1978. Under this system, media were more a propagandistic organization of public opinion for the government than a business enterprise.

In this environment, media organizations were more focused on generating public benefits rather than on making money. Therefore, within a newspaper company, the editor-in-chief—responsible for the content management—was much more powerful than those who were responsible for the management of the company. At that time, all employees in the newspaper office were under the leadership of the editorial board, while the editors and reporters were under the leadership of Chinese Communist Party (CCP). This "division of power"

could be addressed in two forms. One form saw the chief editor as leader under the supervison of the CCP. According to the other form the chief editor and the owner managed the newspaper company together, always under the supervision of CCP (Tang Xu jun 2003).

In the first case the committee of the CCP represented the highest policy-making actor, and the chief editor carried out the policy made by the committee being in charge of the concrete business of the newspapers office. However, the non-editing departments, such as the personnel, printing and distribution departments, were merely in charge of the internal business affairs of the newspaper office and acted as a link between the newspaper office and the related departments outside the office. In this case the newspaper was a non-profit company (see Figure 1).

In the second case the owner was in charge of managing the business under the supervision of the committee of the CCP. The editor helped the owner to manage the content side of the business (see Figure 2).

One advantage of these two forms of leadership relies on the fact that the newspaper could guarantee an effective propaganda of the government policy under the supervision of CCP.

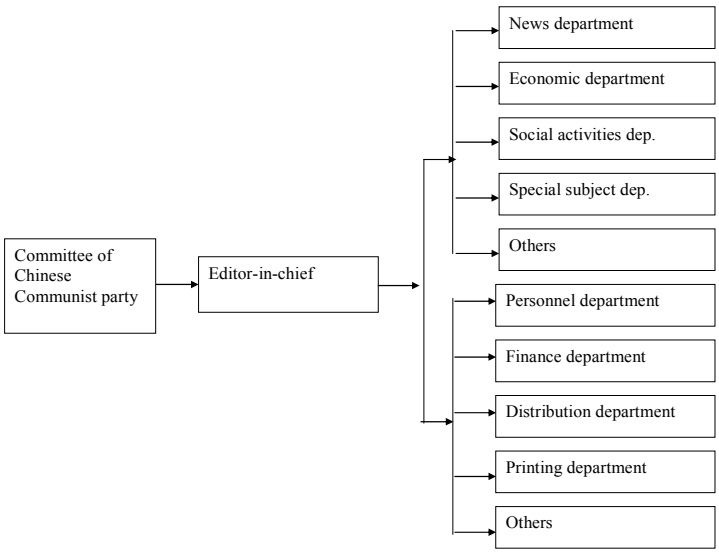

Figure 1. The Structure of a Newspapers Company within the Planned Economy System of China, in which the Chief Editor is in Charge of Managing the Businesss under the Committee Leadership of CCP

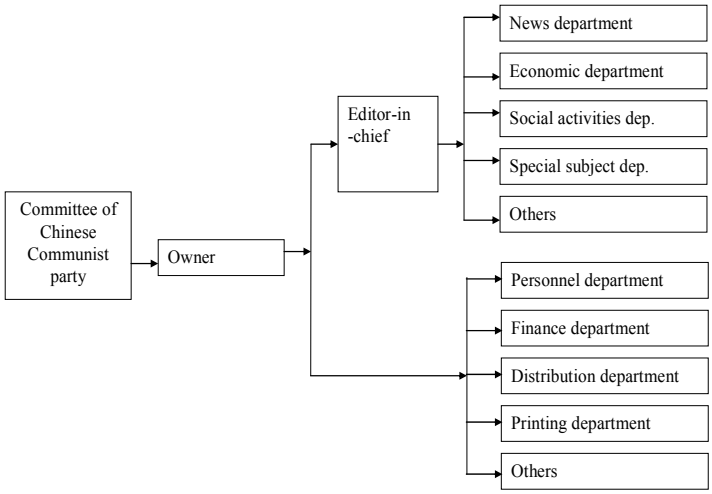

Figure 2. The Structure of the Newspapers in the Planned Economy System of China, in which the Chief Editor and the Owner Manage Together the Newspaper Company under the Committee Leadership of CCP

The Organizational Structure of Broadcasting Companies and its Meaning during the Planned Economy System

Within the broadcasting companies during the planned economy system the president of the company was responsible for managing the broadcast organization under the supervision of the CCP committee. The president arranged the daily business and managed the broadcast organization in general. Under the position of the president, there were other departments that helped the president to cope with the daily business within the organization: among them the department for general editing, for financial affairs, for broadcast or television programming, and the technical department. At that time, the main characteristic of television companies was that they had no marketing or advertising department. Their main structure can be found in Figure 3.

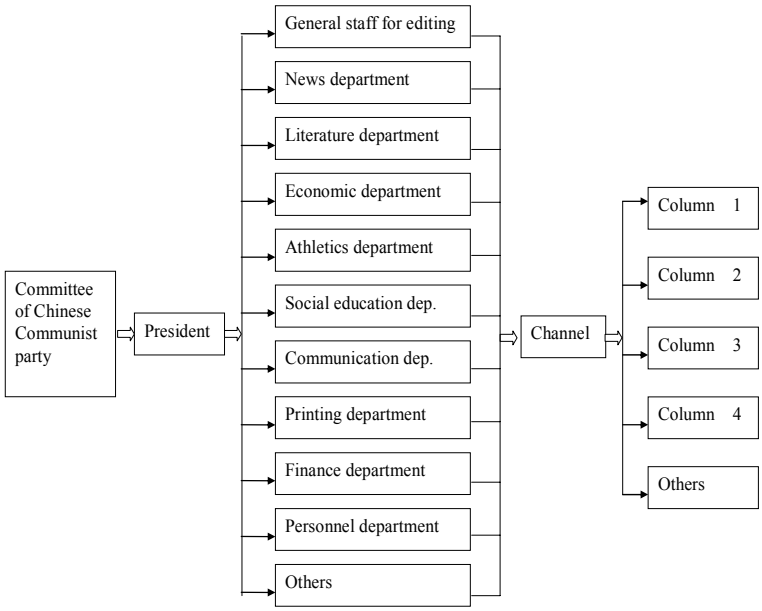

Figure 3. The Main Broadcast and Television Organizational Structure under the Planned Economy System of China

The Organizational Structure of Chinese Newspaper Companies within the Market Economy System

The Organizational Structure of Newspaper Companies before the Newspaper Industry Groups were Founded (1978-1996)

After 1978, the newspaper companies started to be run as "government's units with business management". The newspaper industry went on accepting the dual leadership of the CCP and the news department, as the newspaper was still one of the government's units in charge of propagandizing the government policy. However, newspapers became for profit companies. Each journalistic unit became an independent corporate body with the power to authorize the post, hire the needed people, model the organization and dispense the staff. The unit also took on the sovereignty to distribute wages, bonus etc.

At this time, the organizational structure of the newspaper companies was based on the owner leading the editor-in-chief and the general manager (or editor-in-chief, general manager and vice-presidents) and managing the daily work. The owner was responsible for the division of labor under the supervision

of the CCP. Separating the management function from the editorial one, the owner became the highest officer, always under the supervision of the committee of CCP. He was responsible for the upper committee of CCP and the lower management sections from the editorial department to the administrative department.

Usually the leadership layer was composed by editor-in-chief, general manager and vice-president. The editor-in-chief was responsible for the content of the newspaper, while the general manager was responsible for the management of advertising, distribution and printing within the newspaper. The vice-president was responsible for the administrative departments, such as the personal department. The concrete structure of the newspaper office would be different according to different newspapers (see Figure 4).

Thank to this organizational transformation the management part of the business gained equal power as the editorial one and began to play a very important role within newspaper companies.

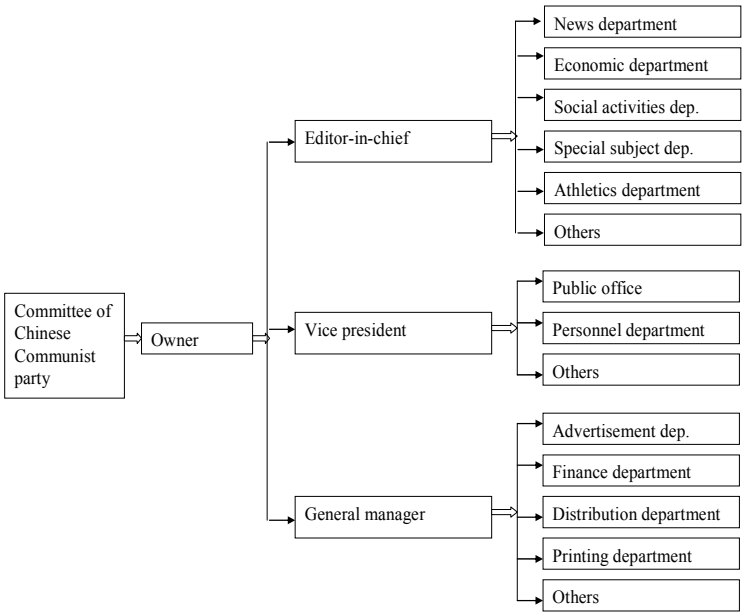

Figure 4. The Structure of Newspaper Industry Organization in the Background of the Market Economy System but Before the Newspaper Industry Groups were Founded (1978-1996)

The Organizational Structure of Newspaper Companies after the Newspaper Industry Groups were Founded (1996-)

After China established the first newspaper industry group in 1996, the Chinese newspaper industry fell into the cyclone of merging small newspaper offices and turning them into one big newspaper group. All these newspaper groups were set up in its original province. The new owner was responsible for the whole group under the supervision of the CCP.

Mostly, the leadership of the unit was composed by the owner, the vice-president, a general manager, an assistant manager, an editor-in-chief and assistant editor-in-chief etc. These people formed the committee of management for the newspaper group, which represented the highest decision center. This committee was composed by three subsidiary organizations: the editorial committee, the economic managing committee and the committee of CCP (see Figure 5).

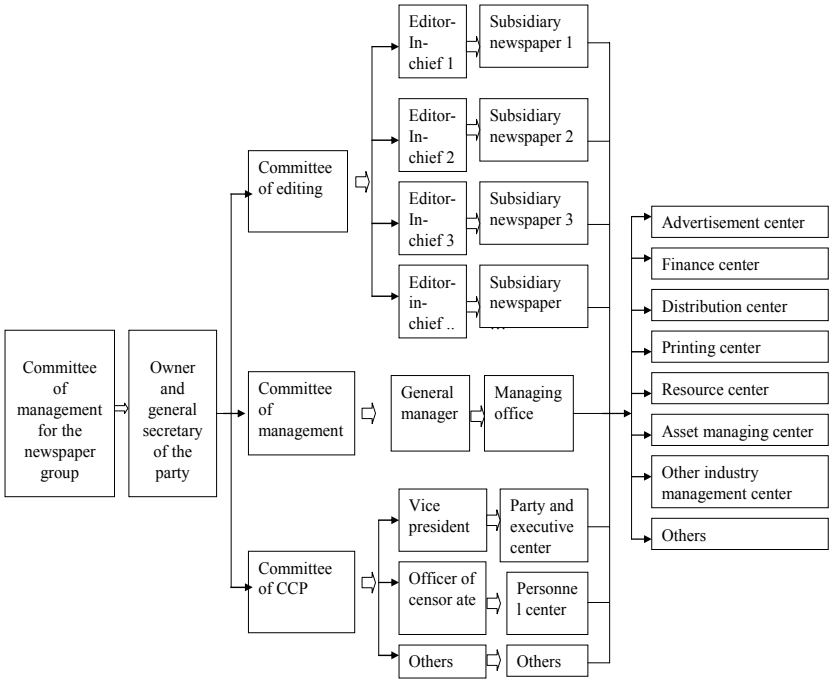

Figure 5. The Organizational Structure of Newspaper Companies within the Market Economy System after the Newspaper Industry Groups were Founded. Made on the Basis of the Structure of Guang Zhou News Group and Shang Hai Wen Hui , Xin Min Evening Newspaper Group

The Advantage of the Organizational Frame after the Newspaper Groups Were Founded

First of all, the new organizational frame of the newspaper industry turned many scattered newspaper offices into one big newspaper group which force was greater than any one of them before the group was founded. This transformation enhanced competition between different newspaper groups.

Second, together with the merge of newspaper companies, this organizational change urged also the bankruptcy of those newspapers which had low efficiency. Third, establishing newspaper groups helped the exploitation of synergies and the sharing of resources.

Last but not the least, it was easier for the staff to learn and absorb the advanced management experiences and results.

The Disadvantage of the Organizational Frame after the Newspaper Groups were Founded

The creation of newspaper groups was forced by a government decision and not by market mechanisms. Therefore the re-organization of the newspaper industry did not necessary lead to greater efficiency or better quality of management or performance. The overall quality of the newspaper did not gain very obvious improvements. Management mechanism, circulation, and advertising revenues of the newspaper did not obtain obvious amelioration either.

The newspaper groups are still public enterprise units in which the committee leadership of the CCP is still the highest policy-making agency. This doesn't support the application of market oriented management tools to manage the groups thoroughly. As a result, it is hard for the newspaper groups to improve their performance.

Some newspapers groups rushed unreasoningly into differentiation strategies and wasted huge capitals in investing in projects which had nothing to do with the newspaper business.

The newspaper groups were created to cover news within a province. A few of them though could break through the boundary of the province. These became monopoly newspaper groups which appeared in many regions, therefore hindering competition among different provinces.

The Organizational Structure of the Chinese Broadcasting Industry within the Market Economy System (1978-)

The Organizational Structure of the Broadcast Industry before the Broadcast Groups were Founded (1978-1999)

After the Year 1978, the Chinese economic system changed from planned economy to market economy. During that period, but before 1999, in which the first Chinese broadcast groups were founded, the structure of the industry mainly showed two forms.

One form saw the president as responsible for the whole company with the help of different channel directors and under the supervision of the CCP. According to the other form the president was instead responsible for the whole work with the help of different directors of functional departments, always under the supervision of the CCP. Generally speaking, the great change within broadcasting organizations during that period was the increase of positions related to the management of the company such as advertising managers or production managers who held the economic responsibility. In the following sections we will describe these two organizational forms more in detail.

The president is responsible for the whole work with the help of different channel directors under the supervision of the CCP.

This organizational structure was mainly based on the channel directors' relatively dependent management power. The structure included many departments such as the editing department, the channel departments, the advertisement center, the technology center and so on. The task of the editing department was to censor, review and rearrange the order of the programs of each channel. The programs were produced by the channels and not by the editing staff.

Generally speaking, each channel had a general channel director and an editor in chief. The former was responsible for the channel business as a whole, mainly including staff related matters, the inside business adjustment of the channel and the financing of the channel; the latter was responsible for the program production of that channel. The chart of the organizational structure can be found in figure 6.

On one hand, this kind of structure enhanced the go-aheadism of the staff within each channel. On the other hand, it led to a vicious competition among the internal departments of the broadcasting organization.

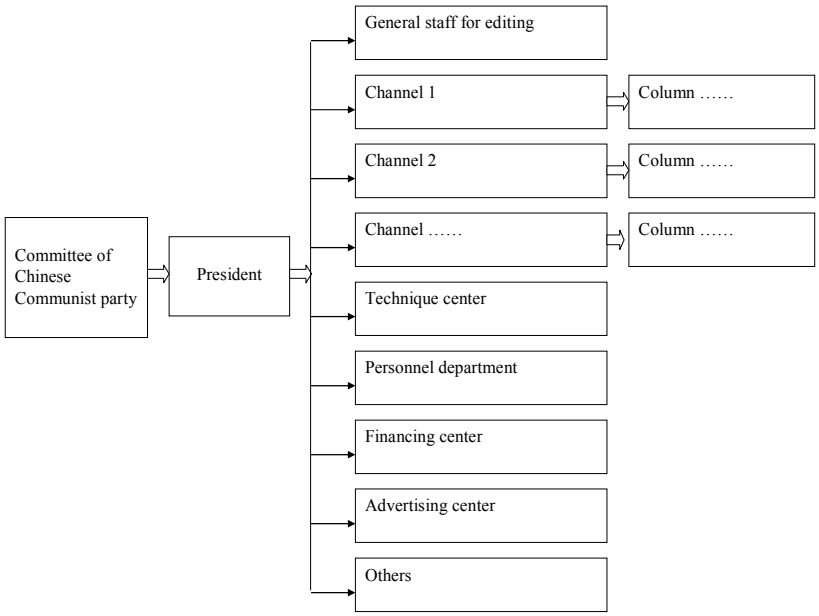

Figure 6. The Organizational Structure of Broadcast or Television Companies in which the President is Responsible for the Whole Work with the Help of the Different Channel Directors under the Leadership of the CCP

The president is responsible for the whole work with the help of the different directors of functional departments, always under the supervision of the CCP.

This organizational form was characterized by the channel directors not having management power. The directors of each functional center on the other hand had great power. Under the leadership of the president, there were a general department for editing, some program working centers, an advertisement center, a technology department and so on. After the programs were produced by the working centers, they would be sent to the general staff for editing and be played by channels according to the characteristic of the program. Instead of taking part in the production of the program, each channel was merely responsible for playing the program.

These working centers included different programs such as the news program, literature program, economic program, science and technology program, legal system program, young program, athletics program etc. The concrete organizational structure can be found in Figure 7.

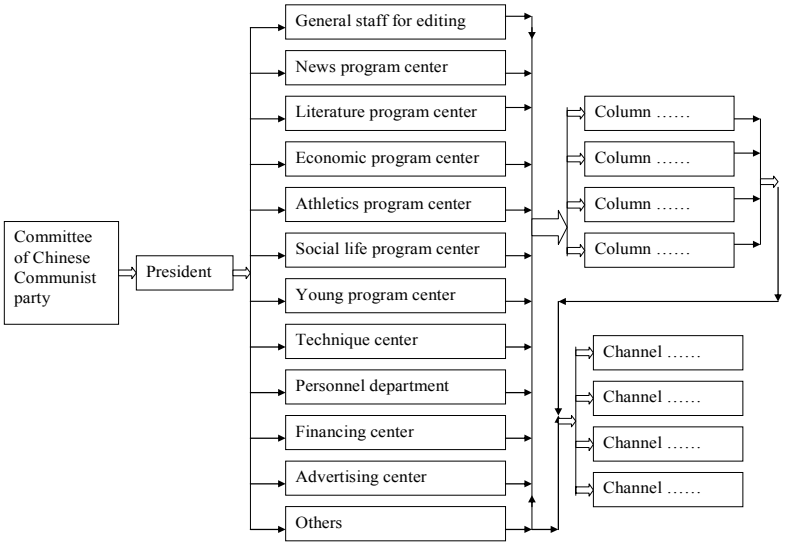

Figure 7. The Organizational Structure of Broadcast or Television Companies in which the President is Responsible for the Whole Work with the Help of the Different Directors of Functional Departments under the Leadership of CCP

Within this kind of organizational structure it is easy for each working center to exert the professional function, arrange the program appearance as a whole, and keep the channels in one broadcasting organization away from malicious competition.

The Organizational Structure of Broadcast Companies after the Broadcast Groups were Founded (1999-)

After the first broadcast television industry group was established in China in 1999, the Chinese broadcast or television industry started to merge small broadcast or television stations into several big groups which management followed the market mechanisms instead of always applying what the government ordered.

The first broadcast group located within a city was founded in June 9th, 1999. That was the Wu Xi Broadcast and Television Industry Group in the Jiang Su Province. The first group at province level was established in the Hu Nan province on December 27th, 2000. That is Hu Nan Broadcast and Television Industry Group, which became the mark for the broadcast industry group and its system. On April 19th, 2001, the Shanghai Media and

Entertainment Group was founded, while at the end of the year 2001, the Chinese Television and Film Group, the biggest media group in china, was started.

In the process of establishing television groups, the key organizational change relied on the merger of the cable television stations into one if there were more than one cable television stations in a big city. Further, this transformation integrated the cable television and the wireless television stations into one group if there were more than one of them in a big city in the province.

Last but not least, the integration happened between the television industry and other cultural industries such as the movie and the cultural performance industry. Up to now the television industry groups are mainly composed of the following organizational parts (see Figure 8) (Huang Shen Ming Ding Jun Jie 2001).

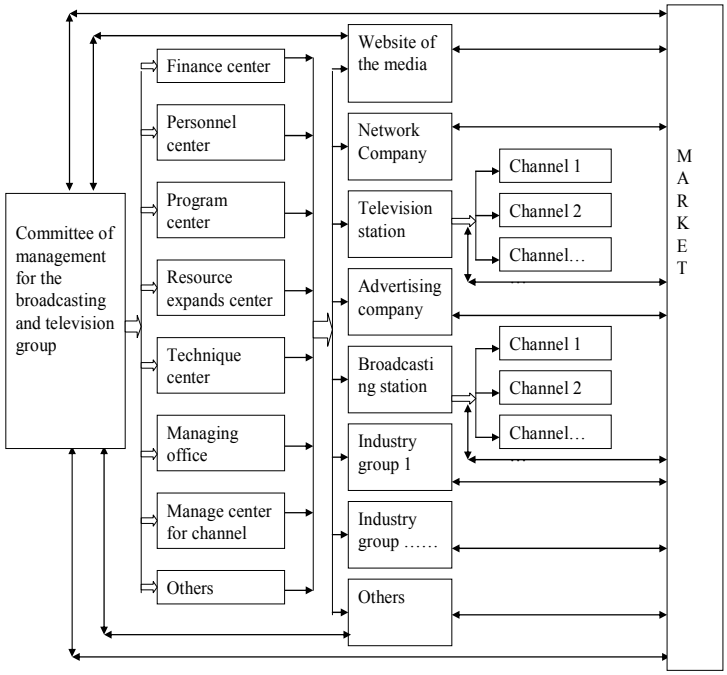

Figure 8. The Organizational Structure of Broadcast or Television Industry after the Groups were Founded (1999-)

The Merits of the Group Structure of the Chinese Broadcast Industry under the Background of Market Economic System

The integration of the broadcast industry and other cultural industries helped to increase the power of the groups and make them highly efficient, well-coordinated and standardized broadcast companies.

The Shortcomings of the Group Structure of the Chinese Broadcast Industry under the Background of Market Economic System

The shortcomings of the transformation of the broadcast industry in China are similar to the ones previously discussed for the newspaper industry after the newspaper groups were founded. However, the broadcast industry had more influence and a more complicated organizational structure compared to the newspaper industry. Further research could therefore focus on whether the broadcast industry should concentrate or scatter its power in its developing process.

Conclusions

We can say that the Chinese media industry has undergone a transformation in line with the transition from a planned to a market economy system. The management side of the business has gained more and more importance, even if ultimately the CCP still controls the editorial content. The increased attention to managerial issues has fostered the economic efficiency of the companies and had led to a first, government piloted, concentration process. The seeds of market competition within the media industry have now been spread out and the first "fruits" of this sowing can be seen in the current development of the media industry, which is attracting high investments both internal and from oversea.

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Digitization and the New Economy: Telecommunications and Television

Past, Present, and Future of the Telecommunications Industry

Jacqueline Pennings
Hans van Kranenburg
John Hagedoorn

The telecommunications industry has made its mark in history. It has experienced a series of dramatic changes since its inception in the 1880s. After a flourishing start, wide-ranging in form and structure, the telecommunications industry developed gradually into a public-owned industry without competition. Moreover, during the first half of the 20th century, the telecommunications industry became a relative stable industry worldwide. Nonetheless, in the 1950s, thoughts of deregulating the telecommunications industry started to develop gradually. The United States of America (USA) were the first country to deregulate the telecommunications market. Many decades later other countries also started to deregulate their telecommunications markets. During the past three decades, due to the latest liberalization and privatization wave in the world, the telecommunications industry has turned into a dynamic environment and is rapidly growing (Graack, 1996). In addition, new technological developments have created new opportunities, but also threats in the telecommunications industry. These developments have stimulated the convergence of previously distinct industries such as the telecommunications, information, entertainment, media, and consumer electronics into a new industry, the so-called multimedia information industry (Chan-Olmsted & Jamison, 2001).

In this rapidly changing industry, the availability of state-of-the-art technological know-how, innovations and domestic and international market access are critical to a company's competitive success. As a result of a number of radical political and technological developments, telecommunications companies needed new or complementary capabilities and resources to fulfill the new demands and requirements. Therefore, extensive use was made of alliances, mergers and acquisitions (M&As) (Chan-Olmsted & Jamison, 2001; Waverman & Trillas, 2002). Companies had to reconsider their strategies and their product and market portfolio. This is probably one of the main reasons why the strategic behavior of telecommunications companies has attracted so much attention in recent years, both in the academic literature and in the popular press. Against this unique historical background, we provide an analysis that gives insight into the most important historical events and their impact on the telecommunications industry since the innovation of the telephone in the

1880s. The analysis is confined to the strategic behavior of telecommunications companies in order to deal with internationalization, economies of scale, competition, and recent needs of the consumers for an integrated product (Chan-Olmsted & Jamison, 2001). The paper discusses inter-firm partnerships and acquisition patterns, because these integrative modes have frequently been used in the telecommunications industry, especially in the 1990s. Telecommunications companies needed to develop or acquire specific technological capabilities and resources to deal with the rapidly changing environment. These companies allied with and acquired new companies, in particular, young innovative companies from the New Economy with a distinctive technology (Li & Whalley, 2002; Stubbs, 2004). The integrative modes were also used by incumbents to enter new markets (Jamison, 1998).

This study is structured as follows. Sections 2 and 3 describe the early development of the telecommunications industry. Section 4 discusses the deregulation actions in the world and their implications on the telecommunications industry in the second half of the 20th century. This is followed by a discussion of the technological developments in the industry and the emergence of the multimedia information industry. Although the innovations are numerous, the attention is restricted to the general impact of the technological development on the industry. Section 6 describes the general trends of companies' strategic actions to adjust to the new demands and requirements. It presents a historical distribution of partnerships and acquisitions with special reference to internationalization and industries. Some conclusions to be drawn from this study are discussed in the last section. Here again, a link to the new economy would be nice. An important finding is that, next to the increase in M&A and alliance activities, the New Economy industries have developed tremendously. These developments created opportunities for telecommunications firms to access new markets and enter into each others business.

The Impact of the Telephone Technology

In 1884, Alexander Graham Bell invented the first telephone. This innovation introduced a complete new way of communication. It made communication more efficient and faster. The innovation altered not only the types of communications services available, but also the industry's cost structure and the degree of substitutability and complementarities of services and products. Before the telephone could be put in use, however, an extensive infrastructure had to be constructed and the technology had to be made more robust to handle long-distance calls (Casson, 1971; Wallsten, 2001a). These conditions required huge and risky investments. As a consequence, these investments were carried out by the government. The government of the USA was the first to adopt and implement the telephony technology next to the telegraph system. Because of privately owned telegraph system in the U.S., the government was

less obligated to protect this industry (Wallsten, 2001a). The policy of the U.S. was to stimulate fair market competition. The competition in the USA increased when the Bell patents expired in 1894. Due to these developments the U.S. showed the highest telephone penetration at that time (Wallsten, 2001a). However, other countries were reluctant to accept the new communications system. Their governments rather wished to remain with the telegraph services, since this was a state monopoly that provided power and high pay-offs. When telephone technology became legitimate, the governments, particularly in Europe, were also forced to incorporate the new communications technology within their system. Some governments introduced the technology in their own control and the use of the telephone under strict measures, while others let private companies take their chances. In Germany, for example, the public was not allowed to lend their telephone to the neighbors. If they did, they risked a punishment of six months in jail (Casson, 1971). In other countries, such as those in Scandinavia, a more liberal approach was taken.

Throughout the world, three industrial structures emerged within the industry at the end of the 19th century and the beginning of the 20th century. The first group of countries allowed competition amongst private companies. For instance, the government of Denmark did not wish to enter into the telephony business. Thus, only private companies operated in the market. The only area where the government did participate in was the construction of long distance lines (Wallsten, 2001a). In the USA, the industry started with two competitors, fiercely competing over customers. Western Union had the advantage of being a national established prestigious company, it owned a wire infrastructure all over the country, and had the unique right of building wires along roads and on top of houses (Casson, 1971). The Bell Company, on the other hand, had the advantage of owning the Bell patents.

The second group showed a significant overlap with the first group but included a state-owned company that was competing with the private companies. Norway, Sweden and Finland were the best examples of this scenario (Andersson-Skog, 2000). These first two groups were characterized by significant competition within the countries. The third group of countries only allowed a state-owned company that had a monopoly position (Wallsten, 2001a). In general, countries from the third group were hesitant to invest in infrastructure, therewith hampering the development of the industry. This structure was preferred in continental Europe. For instance, France operated a monopoly structure of the telecommunications industry since 1889. At that time, it was lagging behind in telephone connections. In 1914, France had invested in 0.8 telephones per hundred inhabitants compared to 4.5 telephones in Denmark (Wallsten, 2001a).

As mentioned above, in the early stage of the industry, two significant differences could be observed between countries with on the one hand, only state-owned telecommunications companies and on the other hand, countries with free competition in the telecommunications market. Countries allowing

for competition had a higher telephone penetration then countries that had a state-owned monopoly in telecommunications. Contrary to general expectations, some countries with competition among telecommunications companies even had higher telephone penetration in rural areas than countries with state-owned telecommunications companies (Wallsten, 2001a). With regards to pricing for long-distance service, the countries with competition charged lower prices for telephone services then countries with state-owned monopolies (Wallsten, 2001a).

Trend Towards a Monopolistic Market Structure

Mixed competition structures were present in the first development stage of the industry. After a successful start, the telecommunications industry developed gradually into a state-owned industry without competition. The reason for this development was that private telecommunications companies concentrated their activities on the profitable areas. They only built sophisticated network infrastructures in the high population-density areas (Casson, 1971; Thimm, 1992). The focus and strategy of the companies created an increasing gap between the regions. Because a sophisticated communications system stimulated the economic and social activities in a region, it was important to have an up-to-date network for the whole country. Without a solid and innovative infrastructure, the country could not reach the optimal welfare level (Chandler, 2001). Due to these developments governments felt the increased need to take up responsibility and control the telecommunications industry. In the second half of the industrial revolution, the telecommunications industry turned into a government-owned business[31]. The monopolization of the industry was a global trend. The monopolist was now solely responsible for the technological and economic environment, introducing new technologies and coping with changing markets (Chandler, 2001). In this period, the national telecommunication markets were characterized by stable growth. The only regulatory framework was the government. This situation continued through the mid 20th century.

The 1950s signaled a change in the governments' perception of the proper telecommunications structure. Particularly, the government of the USA wanted to allow competition in its telecommunications market. At that time, American Telephone and Telegraph (AT&T) and its Bell System Operating Companies had a monopoly position in the USA. It was created after the establishment of the Communications Act of 1934 (Chakravarthy, 1991). In 1968, the Federal Communications Commission's (FCC) 890 Ruling allowed one fixed-lines competitor into the market (Kennedy, 1989). In 1969, the USA introduced a competitor to its monopolist AT&T. The first competitor that was allowed to

[31] This was a logical step because all utilities, like electricity and water, and train services were government-owned at that time.

enter the market was Microwave Communications International (MCI) (Chakravarthy, 1991). It was only allowed to enter the fixed-lines business between two cities. AT&T stayed the key provider of fixed-line services. Hence, the FCC had imposed regulations to the industry players in order to advance equal competition, like asymmetric price regulation and access charges (Green & Teece, 1998).

During the period when a deregulated telecommunications market was created, the USA was invaded by many non-USA equipment vendors. In reaction, other countries were urged to open their markets in line with the USA model (Thimm, 1992). The USA government threatened with trade reciprocity (Snow, 1995). The reformation of the United States telecommunications industry triggered open competition and the establishment of independent regulatory agencies worldwide (Wallsten, 2001a), although it took a couple of decades before other countries followed competition in their telecommunications market.

The debate for worldwide agreements on liberalization of the basic and enhanced telecommunications services took place under auspices of the World Trade Organization (WTO). Particularly, the General Agreement on Trade in Services (GATS) was concerned with these negotiations. The importance of trade agreements in services was recognized in 1986, when the Ministerial Declaration on the Uruguay Round was made public. In 1994, the General Agreement on Trade in Services was formed, in which all members agreed to liberalize their telecommunications industry (McLarty, 1998)[32]. The General Agreement on Trade in Services (GATS) was developed next to many other agreements on the deregulation of the industry, such as the EU Liberalization Directives. In many countries, governments allowed one competitor at first in a restricted setting, and later on introduced open competition. They also reduced gradually their stake in their telecommunications companies after the liberalization (Wallsten, 2001b). Furthermore, an independent regulatory agency was created to protect fair competition and equal opportunities for all companies in the telecommunications market. It was responsible for the adherence of telecommunications companies to competition rules.

[32] Three goals were apparent in forming an agreement in the telecommunications sector: nondiscrimination among all members, market access, and, transparency of laws and regulations (McLarty, 1998). Nondiscrimination among all member countries basically means the allowance of foreign competition in the member countries' home market without any discriminatory favors to domestic service providers. The market access commitment takes this requirement too a higher level, and requires countries in all circumstances to allow the most liberal access too foreign providers in their home countries. This means releasing all tariff and non-tariff barriers. Furthermore, the member countries were required to employ the Schedule of Commitments in 1998. This schedule consists of an adherence to the General Obligations, the Specific Commitments, and the Reference Paper. The Specific Commitments, such as national treatment and market access, pertain only to the service sectors embraced by the Member countries. The Reference Paper consists of additional commitments of a Member country (McLarty, 1998).

Telecommunications Industry and Open Markets

In the last three decades, the environment in which the telecommunications industry was operating started to change. As globalization set the stage, the telecommunications industry became gradually a more global industry with increasing competition. In addition, new technological developments such as mobile telecommunications and digitalization have had a significant impact on the restructuring of the industry. Consequently, governments have started to privatize their state-owned telecommunications companies to open competition and to establish independent regulatory agencies. As mentioned above, the pace of liberalization, deregulation, and privatization however differed between regions. The next sections describe these differences.

North America

In 1984, the U.S. Justice Department's Consent Decree declared the divestiture of AT&T's operating companies into seven Regional Bell Operating Companies (RBOCs), the Baby Bells. These RBOCs became providers of local telecommunications services and related telecommunications equipment (Kashlak & Joshi, 1994). Their regional character was evident from the names the RBOCs had, like BellSouth or Southwestern Bell. AT&T was left with its long distance telephony, network, equipment subsidiary and the Bell labs (Snow, 1995). The advantage of the new situation for AT&T was the fact that they were now allowed to enter the information services market (Kennedy, 1989). Although the split up of AT&T was an important step in the liberalization process of the industry, the RBOCs were still government regulated. This was partly due to their legacy of a monopolistic position in their core business. This competitive advantage had been balanced with restrictions in order to ensure a competitive market. For example, they were not allowed to enter the information services market. Even though RBOCs had similar starting points, over time, they developed their own strategy and competitive position (Kashlak & Joshi, 1994). This development was affected by diverging regional regulatory strains and core business growth. Technology has further stimulated the dynamics of the industry. Particularly, the mobile telecommunications development has changed the environment substantially. The mobile telephony industry in the USA was launched in 1984 and grew enormously since 1988. Wireless communications was first adapted in the professional business and later by the consumer market. (Manova, Brody, Madhavapeddy & Gylys, 1998).

Europe

The European mercantilist state monopolies faced a completely new situation in the liberalization era. In 1985, the 'Liberalization Directives' under Article 90 of the Treaty of Rome launched the deregulation of telecommunications

market in the European Union. The European Union decided to create an open and competitive telecommunications market (Watson & Wheadon, 1999). The consequential re-regulation of the industry was formulated in the 'Harmonization Directives' under Article 100a of the Treaty of Rome (Watson & Wheadon, 1999). However, the Directives did not stress the pace of harmonization in the European Union. Consequently, countries have implemented these directives into their existing structures in a different way and pace. However, the creation of an open market has actually started after the acceptation of the Full Competition Directive in 1996. This Directive required all member states to have a completely liberalized telecommunications market in 1998. Table 1 presents an overview of the dates on which the European member states privatized and liberalized their telecommunications market.

Most EU countries have fully liberalized their telecommunications industry in 1998. Still, the table also shows that not all countries have fully privatized their telecommunications incumbent. Switzerland and Greece are some of the countries that have not fully privatized their telecommunications market yet. The UK, on the other hand, was the first EU member state that privatized and liberalized its telecommunications industry. The acceptance of the 1984 Telecommunication Act has started the liberalization process of the industry in the UK (Thimm, 1992). Nonetheless, the United Kingdom gradually liberalized its telecommunications structure starting from a monopoly to a duopoly to partial liberalization and then full liberalization over a time span of 12 years. Regulation during this period was tight. For instance, the duopolists, Mercury and British Telecom, both were subject to regulation to 'level the playing field', like interconnection price regulation, and a broadcast-entertainment-services entry restriction. But also asymmetric regulation was present, like retail price caps (British Telecom only), and network development restrictions (Mercury only). All restrictions were administered by OFTEL, the independent regulatory agency for the UK (Cave & Williamson, 1996). In 1996, full liberalization set in, and OFTEL repositioned itself as a body concerned with competition issues, instead of a regulatory institution. It concentrated on eradication of anti-competitive behavior (Cave & Williamson, 1996).

EU community policies were needed to guide the liberalization and standardization of the industry. The community policies were formed for the so-called radio spectrum. The radio spectrum consists of mobile and satellite communications, broadcasting, transport and R&D. These community policies were translated into regulations and downwards communicated by the European Conference of Telecommunications administrations (CEPT) to independent regulatory authorities, like OFTEL, and the community (Economic Commission, 1998, p. 14)[33].

[33] This section reports issues discussed in a green paper. Green papers are studies that give recommendations and are a basis for debate on the subject, whereas White papers contain the directives for realization of certain policies in the European Union (Thimm, 1992). Green papers

Table 1. Dates of Privatization and Liberalization in the European Countries, 1984-2004

Year	Partial privatization	Complete privatization	Liberalization
1984	United Kingdom (52.4%)[34]		
1987	Spain (66.8 %)		
1991	United Kingdom (78.2%)		United Kingdom
1993		United Kingdom	Sweden
1994	Denmark Netherlands		
1995			Finland
1996	Germany (26 %) Portugal (49 %)		
1997	Austria France Italy	Spain	Denmark
1998	Switzerland (49.99 %) Finland (22.2 %)	Denmark	Austria Belgium France Germany Ireland Italy Netherlands Norway Spain Switzerland
1999	Finland (42.4 %)		
2000	Austria (55.6 %) Finland (47.2 %) Norway (22.3 %) Sweden	Portugal	
2001			Greece
2002	Belgium (50 % - 1 share) Switzerland (40 %) Finland (19.4 %)[35]	Italy	
2004	Greece (66.3 %) Switzerland (33.9 %)		

Sources: Annual reports and websites of the formerly state-owned companies.

give an accurate description of what is relevant in the discussion about this industry, which objectives the European Committee embraces as imperative for this business, and the European governments sincerely draw on the suggestions.

[34] (..%) = percentage privatized.

[35] In 2002, the Finnish state had a 19,4 % stake in TeliaSonera and the Swedish state had a stake of 46 %.

The changes in the telecommunications environment of Eastern European countries were relatively similar to Western European countries. Their telecommunications industry showed comparable developments as in the Western European countries, although on a more gradual level. Next to the introduction of competition, the CEE countries also needed to modernize telecommunications services and develop a network (Holcer, 1995). Currently, most former state-owned telecommunications companies in Eastern Europe and the Baltic States are owned by foreign companies, in particular Western European telecommunications companies (Telcap, 2005).

Asia and Pacific Region

The GATS at the Uruguay Round also forced the Asian governments to liberalize their telecommunications industry, although the Asian region generally lagged behind in starting this course of action in comparison with Europe or North America. When competition was introduced in Asia, it happened only partially for certain regions or certain services (Fink, Mattoo & Rathindran, 2003). Unrestricted entry, limitless private and foreign ownership, and independent regulatory bodies are still far away from realization of the agreements. (Fink et al., 2001). Table 2 presents the privatization policy of the fixed-line monopolies, considering local, long-distance and international services; and the presence of mobile operators in 17 Asian countries in the period 1989-1999.

Table 2 illustrates the mixture of methods used in telecommunications reform, too. Countries, like Bangladesh, Cambodia, Thailand and Vietnam showed limited or no privatization efforts. In China, India and South-Korea a few privatization barriers were removed. They maintained the position of the incumbent as a fully state-owned company while allowing some competition in certain fixed-line divisions. A more liberal situation was observed, for example, in Japan, Hong Kong, Indonesia, Pakistan and Singapore. However, this group of countries has also kept their competition restricted to particular areas and time periods. For instance, Japan opened parts of its telecommunications market in 1985. The new entrants were allowed in all markets, except for the local communications networks, even if also the latter was gradually liberalized over time (Omura, 1997; Tanaka, 1997).

Furthermore, foreign ownership of the telecommunications companies was not allowed or limited (Fink et al., 2001). For instance, in the first years of deregulation in Japan, foreign ownership was restricted to one-third (Omura, 1997). In general, governments in Asia believed that especially the local providers generated the highest pay-offs and contributed most to the economic and social development of their country. A key industry as the telecommunications industry should therefore be fully controlled by the government or fully domestically owned. When foreign competition was allowed it was in the form of equity joint ventures to increase the knowledge of local companies.

Table 2. Stages of Telecommunication Reform Policy in 17 Asian Countries, 1989-1999

Country	% Privatization state-owned monopoly	Fixed-line services			Number of Mobile operators
		Local	Long-distance	International	
Bangladesh		Monopoly, Competition in selected rural areas	Monopoly	Monopoly	1999: 4
Cambodia		Monopoly	Monopoly	Monopoly	1999: 4
China	0%	Monopoly	1997: Duopoly	Monopoly	1989: 1 1996: 2
Hong Kong		1999: Fixed competition	n.a.	1999: Competition	1999: 6
India	0%	1998: Regional duopolies	1999: Competition	Monopoly	1995: 8 1999: 20
Indonesia	1995: 19% 1997: 23%	1999: Monopoly, joint ventures in selected areas	Monopoly	1999: Duopoly	1989: 1 1996: 7
Japan		1999: Competition	1999: Competition	1999: Competition	1999: Competitio n
Korea	1993: 10% 1996: 29%	Monopoly	1996: Duopoly	1991: Fixed competition	1989: 1 1997: 5
Malaysia	1990: 25%	1996: Fixed competition	1996: Fixed competition	1994: Fixed competition	1989: 2 1997: 8
Nepal		Monopoly	Monopoly	Monopoly	n.a.
Pakistan	1994: 12%	Monopoly	Monopoly	Monopoly	1990: 2 1995: 3
Philippines	1989: 100%	1995: Fixed competition	1995: Fixed competition	1992: Fixed competition	1991: 2 1994: 5
Singapore	1993: 11% 1996: 17%	1999: Duopoly	Monopoly	1999: Duopoly	1989: 1 1999: 3
Sri Lanka	1997: 34%	1996: Fixed competition	1996: Fixed competition	Monopoly	1989: 1 1995: 4
Thailand		Monopoly	Monopoly	Monopoly	1999: 5
Taiwan-China		1999: Competition	1999: Competition	1999: Competition	1999: 6
Vietnam		Monopoly	Monopoly	Monopoly	1999: 3

Source: Fink, C., Mattoo, A. & Rathindran, R. (2001).

The regulation in the mobile services was more relaxed, although the number of licenses, and thus the number of operators, was limited to a few, except for India, that registered 20 mobile operators in 1999. The mobile services were comparatively young and were not publicly owned in most countries. In the last

years, these services showed tremendous growth and in some Asian countries the number of mobile subscribers even passed the number of fixed-line subscribers (Fink et al., 2001).

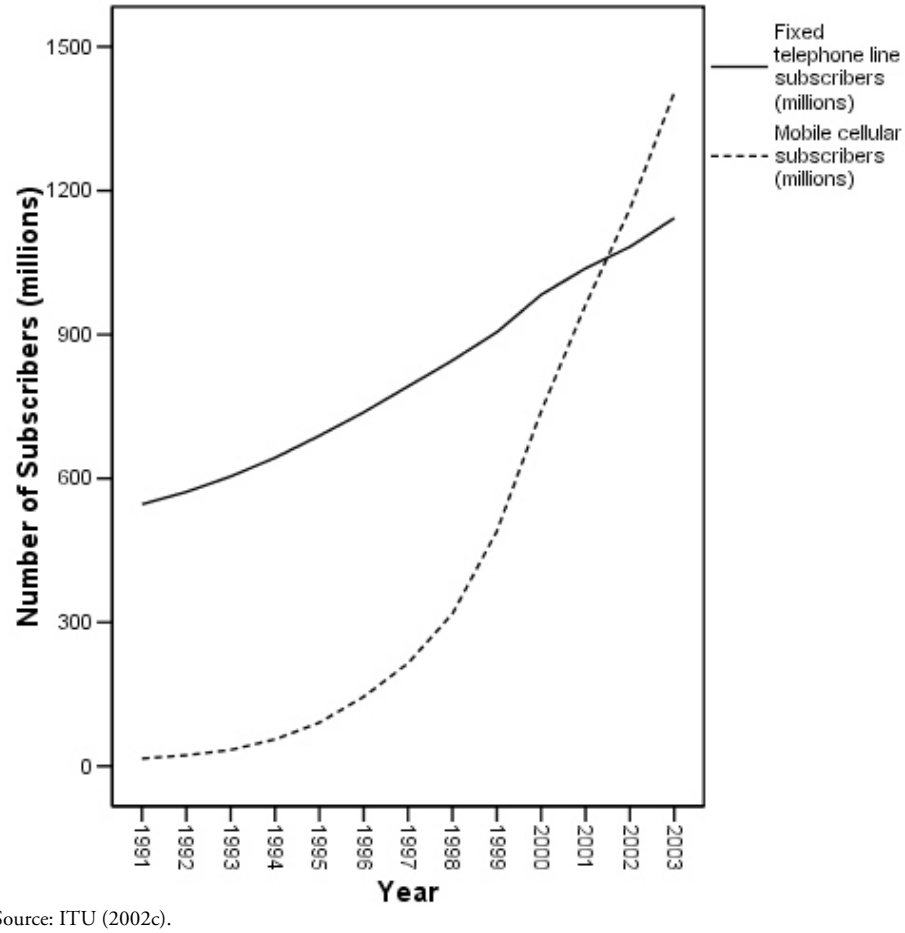
Australia and New Zealand also liberalized their telecommunications markets gradually. In Australia when competition was introduced, Telstra, the former state-owned monopolist, was under tight control concerning its prices, through price caps and tariff requirements. In New Zealand, the control on prices and interconnection was less stringent. Australia regulated the possibility of interconnection for Optus, and New Zealand simply encouraged Telecom, the former state-owned monopolist, to allow Clear on the local access network (Green & Teece, 1998). In both countries, the mobile telecommunications industry was less constrained with regulation. As a result, the mobile telecommunications industry showed an explosive growth in competition (Green & Teece, 1998).

Telecommunications Industry and Technological Developments

In recent years, the telecommunications industry has evolved from manufacturing and providing basic fixed line telephony to an industry that offers mobile telecommunications services, and integrates IT and media into its services (Bourreau & Doğan, 2001). In particular, mobile telecommunications innovation and digitalization have substantially changed the telecommunications landscape. The mobile telecommunications innovation has offered new forms of communications and services such as analog/digital cellular services, cordless telephony, trunking, and paging services (Krogt, 1996)[36]. Particularly, the use of mobile services has dramatically grown in the last decade. According to the International Telecommunication Union (ITU) (2002c), the total number of mobile subscribers in the world increased from approximately 145 million to 1405 million respectively over the period 1996 - 2003[37]. However, the total number of fixed line subscribers in the world increased only from 738 million to 1143 million over the same period. Hence, the total number of subscribers for mobile services exceeded the total number of subscribers for fixed services in 2002 (ITU, 2002b). Figure 1 presents the development of the number of subscribers in fixed line and mobile services. The

[36] Cellular telephony takes up the largest part of mobile services.

[37] The International Telecommunication Union (ITU) is responsible for the development and standardization of telecommunication services in Western countries. Furthermore, it also stimulates and supports the construction of telecommunication networks and services in Less Developed Countries. The International Telegraph Union was established May 17th, 1865. When the telephone came into commercial use, the International Telegraph Union got involved into this part of communications as well. In 1903, the preliminary forms of radio communications became a part of the union as well. The mixture of these two fields was the underlying cause for the official name change in 1934 of the International Telegraph Union into the International Telecommunications Union (ITU, 2002a). The ITU is an affiliation of the United Nations (UN) and 186 countries are member.



Source: ITU (2002c).

Figure 1. Development of Total Number of Fixed Telephone Lines and Mobile Cellular Subscribers Worldwide, 1991-2003

evidence shows the tremendous increase of mobile services starting at the end of the 1990s.

The other main development that has had a significant impact on the landscape was the digitalization. Since the digital technological development, a convergence between the telecommunications industry and the information technology industry is observed. The digitalization of the telecommunications industry is the direct effect of the rapid expansion of Internet. The number of users globally rose from 20 million in 1996 to 400 million in 2000 (ITU, 2002b). The convergence of industries or digitalization of the telecommunications industry is the interplay of four different areas: customer devices,

networks, network devices and content/software (Chan-Olmsted & Jamison, 2001). Customer devices are the apparatus to receive and communicate, like telephones and PCs. Networks are links that transfer information. Network devices are the tools that control and accumulate the information. Content/software denotes the applications people employ (Thimm, 1992).

An additional integration is observed between telecommunications, consumer electronics, and mass media. Nowadays, telecommunications services can generally be classified into two categories: basic services and enhanced services (McLarty, 1998). Basic telecommunication services consist of all voice and non-voice services transmitted without processing. Enhanced telecommunications services include specialized voice and non-voice services, requiring information processing, which adds value. The information transferred from one point to the other needs restructuring or a format change during this process. An example of enhanced services are the features on a mobile phone. Nowadays, mobile phones include the ability to make photos, tape a short video, or listen to the radio and mass media can deliver their content via satellite and telephony (Chan-Olmsted & Jamison, 2001). When integrating the four areas, telephone, mass media, consumer electronics and computing, a new industry has developed, called the multimedia information industry (Fransman, 1997; Chan-Olmsted & Jamison, 2001).

Another recent development in the telecommunications industry is the emergence of the so-called value network. Aggressive competition by new entrants from different industries in the New Economy has forced incumbent telecommunications companies to reconfigure their strategy and business. In this context, a new development is the value network. In a value network, companies from different industries jointly offer products to customers (Li & Whalley, 2002). These value networks are made up of firms from the traditional economy but also from the New Economy. The value network is comprised of six areas: equipment and software, network, connectivity, navigation and middleware, applications and consumers (Li & Whalley, 2002). Related to the value network is the concept of one-stop-shopping. Within one-stop-shopping, customers prefer only one incumbent to maintain all links leased through the network (Graack, 1996). Here, all services needed by the consumer should operate as if they belong to the same overarching network. Companies are, therefore, forced to engage in a search process for additional activities in an attempt to improve their 'fit' with these new business requirements. For this purpose various forms of collaborations between incumbents and innovative new firms in the field is being exploited (Li & Whalley, 2002). An example is the acquisition of Tymnet, a network systems company, by British Telecom in order to provide customers with one-stop-shopping. Through this acquisition, BT is able to offer customers a portfolio of products in global data networks.

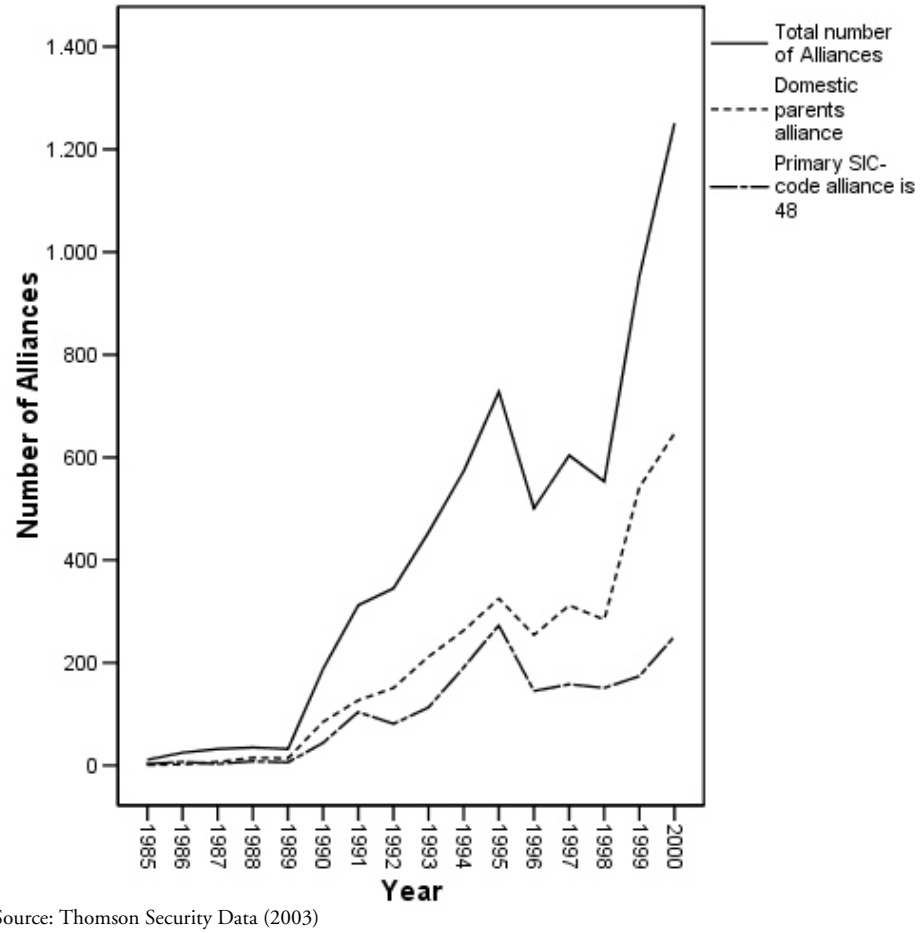
Strategic Behavior of Telecommunications Companies

Due to deregulation, technological innovation and the convergence of industries the telecommunications landscape has changed into a turbulent environment. The telecommunications companies had to make adequate adaptations to these changes and responded quickly to improve or to sustain their competitive advantage (Jamison, 1998; Hamel & Prahalad, 1996; Chakravarthy, 1997). They have used several vehicles to adapt to the new requirements and to improve their long-term performance (Chakrabarti, Hauschildt & Sueverkruep, 1994; Hitt, Hoskisson, Johnson & Moesel, 1996; Williamson, 1996). The choice for a telecommunications company may range from a 'simple' non-equity agreement to a partial or even full equity transaction such as a joint venture, acquisition or merger. A non-equity agreement is any contractual agreement between two or more companies in which none of the companies have a degree of ownership. It is generally believed that this type of alliance has a relative short-term focus. An alliance with a more long-term focus is the joint venture. It is a joint effort to achieve interests through the formation of a new entity by two or more business partners. The new entity can have different ownership structures; however, in most cases the equity is distributed equally among the partners. Chan-Olmsted and Jamison (2001) researched the forms of alliances undertaken by telecommunication companies worldwide. They found that partnerships have frequently been used in the telecommunications industry, especially in the 1990s and they anticipated this trend to continue for the following reasons: globalization, economies of scale, competition, and, integrated product needs of the consumer. Technological advancement also is an important motive for the formation of alliances. Figure 2 shows the development of the number of partnerships by the telecommunications companies in the world since 1985. The number of alliances has increased dramatically in the 1990s.

However, a telecommunications company can not only use partnerships, it can also choose to acquire the operating assets of another company in exchange for either, cash, securities, or a combination of both (Capron & Mitchell, 1998). It can acquire a minority stake (acquisition of less than 50% equity) in another company or a majority stake (acquisition of more than 50% equity) in the company. The latter form provides the acquirer with an absolute controlling stake in the company. This means that the acquiring company will have a certain degree of authority over what happens in the telecommunications company. In an acquisition, the acquiring firm assumes the assets and liabilities of the acquired company (Gaughan, 1991). In the case of an acquisition the acquiring company continues to exist, whereas a merger is a combination of two or more firms in which a new firm is created. A merger joins resources of the separate entities in order to reach common goals. Figure 3 shows the development of the number of mergers and acquisitions (M&As) in the telecommunications industry from 1985 to 2000. The number of M&As also increased dramatically in the 1990s.

Given the globalization and the liberalization of telecommunications industry, many incumbents were forced to develop international strategies (Oh, 1996). Through international strategies, companies were able not only to enter foreign markets, but also to seek foreign assets (both of a tangible and an intangible nature) and to build R&D, supply and production facilities abroad. External strategic options such as an acquisition of or a partnership with a young local company from the traditional or New Economy provide an established market position, access to existing infrastructure, and contact with local expertise. For example, KPN acquired Pantel, a Polish fixed-lines telecommunications company, the Belgian mobile operator BASE, and has a majority stake in E-Plus, a German mobile operator. Also, these strategic forms give companies access to a range of capabilities that they need to further develop both core activities and complementary activities. For example, BT acquired the U.S. network systems company Tymnet, the Spanish network services firm Banco Santander, and acquired several stakes in telecommunications companies in the Asia-Pacific region. Of course, firms could also enter foreign markets by setting up wholly owned subsidiaries. As foreign markets might be difficult to penetrate because of a lack of market presence and lack of information on customers' needs, local operating conditions and government regulations, companies generally prefer partnerships and M&As. Figures 2 and 3 show the gradually increasing importance of telecommunications companies allying with international partners and to become involved in cross-border M&As. During the final years of the 1990s, the international focus increased exponentially. In general, the telecommunications industry has become more internationalized in the last decade.

Furthermore, technological developments have also created new opportunities and threats for incumbents (Chacko & Mitchell, 1998; Kranenburg, Cloodt & Hagedoorn, 2001). Previously distinct industries have converged and new substitutes and complementary products and services have been introduced in the market. To maintain their competitive position, telecommunications companies gained access to new and complementary capabilities, resources and businesses. The companies allied with companies from other industries and acquired companies in expanding and potential markets because of possible increased production, stronger market presence, greater control over industry direction and decreasing competitive pressure (Jamison, 1998). Particularly, inter-firm partnerships can play an important role in an industry where learning and flexibility form the basis of competition (Dussauge & Garrette, 1999; Gomes-Casseres, 1996; Duysters & Hagedoorn, 1999). Partnerships in the telecommunications industry are particularly suited to monitor new opportunities and markets at relatively low cost. They are a more flexible and less expensive mode to set up. Consequently, partnering between established and younger firms from different industries is expected to have increased during the last decade. For example, Telefonica has a partnership with California Micro Devices, an equity stake in the provider of software and



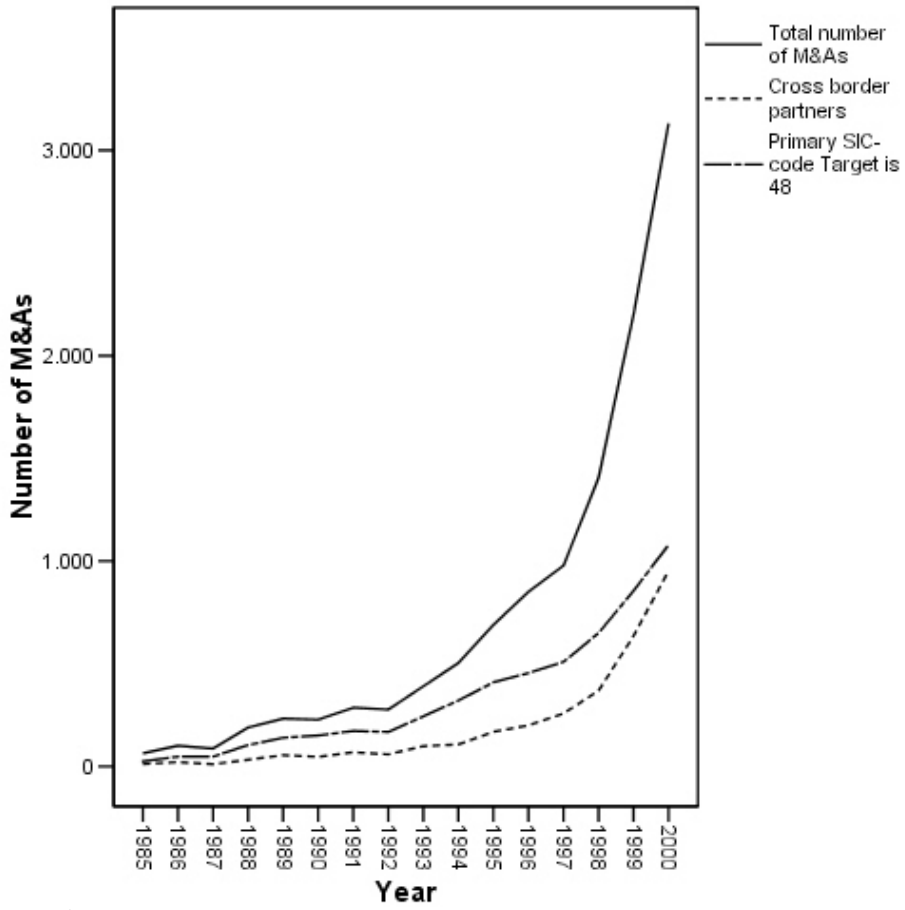
Source: Thomson Security Data (2003)

Figure 2. Development of Total Number of Alliances, Total Number of Domestic Alliances and Total number of Within the Industry Alliances in the Telecommunications Industry, 1985-2000

and computer consulting services INFONET, a strategic alliance with IBM involved in information technology, and an equity stake in the producer of audiovisual content Patagonik Film group. Figure 2 presents the development of the number of alliances made by companies in the telecommunications industry. The minority of partnerships was focused on the telecommunications industry as such[38]. During the final years of the 1990s, the growth of this group

[38] Based on the two digit SIC-code 48 a distinction was made between telecommunications activities and non telecommunications activities.

of partnerships was lower than the growth of alliances with partners from other industries. Figure 3 also shows the same pattern for M&As. For the 1990s the share of M&As of firms from outside the telecommunications industry was higher than the share of within the industry M&As. The second half of the 1990s marked a sudden increase in the share of M&As of companies from other industries.



Source: Thomson Security Data (2003)

Figure 3. Development of Total Number of M&As, Total Number of Cross-Border M&As and Total Number of Within the Industry M&As in the Telecommunications Industry, 1985-2000

Conclusions

The telecommunications industry has been through some major developments in its lifetime. It started out with a mixture of privately owned and state-owned companies throughout the world. In the first half of the 20th century, the telecommunications industry turned into a relative stable industry, which was completely government-owned. During the last decades, due to the liberalization and the privatization wave in the world, the telecommunications industry has rapidly changed. This study showed that many countries experienced a gradual process of liberalization with the goal of full liberalization. When competition was allowed in the industry, the trend was to first allow one vertically-integrated competitor into the market to create a player of similar strength with comparable resources as the previous monopolist had. The succeeding phase was one of more open competition. However, liberalization and privatization not only turned around the outlook of the telecommunications market but also the speed and extent of technological developments. Due to innovations, the telecommunications industry, together with other industries, is rapidly transforming into a new industry, the so-called multimedia-information industry. The industry is the focal industry in the third generation of leading industries (Thimm, 1992).

Deregulation, globalization and introduction of new technologies such as mobile phones and Internet have forced the telecommunications companies to reconsider their strategy and their product portfolio. In that context, companies have tried to develop and gain access to desired capabilities and resources and expanded across national boundaries to sustain their competitive advantages. Companies that lack some of the necessary new competencies used mergers, acquisitions, and partnerships with young innovative companies to acquire the essential technological knowledge and to penetrate new markets. During the 1990s, the telecommunications companies were major acquirers of other companies and interesting partners for alliances, therefore sustaining the emergence of the New Economy.

This study also presented a general overview of major trends in inter-firm partnerships and M&As in the telecommunications industry since 1985, examining both the general developments and the distribution according to internationalization and industries. The overall trends demonstrated an increase in importance of inter-firm partnerships and M&As. The number of domestic inter-firm partnerships and M&As as well as the international inter-firm partnerships and cross border M&As showed an increasing pattern. Another interesting pattern was the increase in importance of other industries. In relative terms, the growth of alliances with partners outside the telecommunications industry superseded the increase in the number of alliances within the industry. M&As demonstrated the same pattern as the inter-firm partnerships. An explanation for this specific pattern can be found in the companies' need for new capabilities and resources emerging from the New Economy in order to

compete in an industry that is transforming into a multimedia information industry.

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The Key of Success, the Cause of Failure: A Comparative Analysis of Two UK Digital Television Companies

Giuseppe Pagani
Benedetta Prario
Fabiana Visentin
Yvonne Zorzi

The process of digitalization has transformed not only the way people watch television but also the way in which television industry works. The competitive dynamics that feature the digital television industry limit the likelihood for new entrants to survive when incumbent organizations have already settled their dominance in the industry. The UK digital television market can be regarded as a remarkable example of such competitive dynamics. In 1998, BSkyB entered the digital television market, after having strengthened its experience in the analogue television domain, becoming the dominant operator in only a few years. One month later, ONdigital decided to enter the same market. ONdigital, however, came across completely different outcomes. Indeed, in four years the company announced its failure.

Our aim is to contribute to a better understanding of media firms' reactions to the opportunities of the "New Economy" era. In particular, the comparison of BSkyB and ONdigital allows us to shed light on the factors that might potentially lead to the success or failure of companies in the digital television industry, a typical sector of the new economy wave. Such analysis will be conducted on the basis of two theoretical frameworks: Resource Based View and Institutional Theory. The Resource Based View revealed to be valuable in highlighting the gap between the set of resources, which the two companies could rely on. Resource availability was undeniably in favor of BSkyB, allowing the company to plan and implement a successful strategy. ONdigital (later ITV Digital) merely replicated BSkyB's strategic moves, although the resources at its disposal were inadequate to attain the same returns: this led the company to its failure.

In order to come to these conclusions, the research had to follow a qualitative research technique through the construction of two case studies which have been consequently compared. In-depth interviews with important representatives of the companies, the analysis of both corporate documentation (such as annual reports) and public information (such as press release features) have been the main tools for gathering fundamental information about the

competitive structure of the market and the strategic policy driving the two companies' actions and decisions.

In the discussion that resulted from such analysis, particular attention has been devoted to marketing and strategy issues which play a relevant role in the competitive dynamics occurring between the two companies.

BSkyB and ITV Digital: Different Paths in the Digital Television Industry

In October 1998, BSkyB—the UK largest digital television platform operator, whose main shareholder is Rupert Murdoch—launched its digital unit, Sky Digital. To promote its launch, BSkyB decided to offer free set-top boxes in exchange of an annual subscription of basic packages.

One month later, after a £90m advertising campaign, ONdigital—the UK carrier of digital terrestrial television (DTT)—a joint venture between the UK operators Carlton and Granada, was launched, despite the numerous technical constraints confessed by the chief executive officer.

By Christmas, a sizeable discrepancy already emerged between the two companies. On the one side, BSkyB marketing campaign allowed the attainment of a large number of subscriptions. On the other side, ONdigital missed out the sales, mainly because of set-top boxes supply problems. The availability of decoders was indeed poor and the decoding technology could be easily counterfeited.

To regain ground over BSkyB, ONdigital chief executive, Stephen Grabiner, proposed an aggressive bid for movie and football rights. This was countered by Carlton and Granada—ONdigital's main shareholders—who decided to withhold ONdigital service from BSkyB. In June 1999, because of these dissenting opinions, Stephen Grabiner resigned and announced a legal battle against ONdigital.

A few months later, Murdoch decided to replicate and confirm the free supply of dishes and set-top boxes in exchange of annual subscription. In response, ONdigital's new chief executive—Stuart Prebble—decided to do the same. Even in this case, the two companies experienced far different outcomes: BSkyB's sales soared to five millions, mainly thanks to the important investment in customer service. On the other hand, ONdigital's churn rate, i.e. the number of customers who decide to leave after the expiration of their subscription, settled to some 30%.

ONdigital assault to BSkyB took up again the following year. ONdigital decided to invest heavily on football to challenge its competitor's dominance in the digital television market. During the summer of 2000, BBC acquired from ONdigital the FA cup and the international matches for £400 million. At its turn, ONdigital signed a £1.3 billion contract with BSkyB for the Premiership, after obtaining the highlights rights. Moreover, ONdigital aimed at acquiring the Football League rights, too. Although BSkyB withdrew from its original

bid, ONdigital offered £315 million to obtain the rights for the Nationwide League and the Worthington Cup. Football bosses welcomed the deal and many clubs rushed headlong into the transfer market and offered expensive contracts.

However, the number of subscribers still dropped and in April 2001 the company announced to re-brand ONdigital as ITV Digital The main purpose of this move was to increase control over the escalating costs. After a huge marketing campaign, ONdigital was finally re-branded as ITV Digital, in order to integrate it thoroughly into the ITV Network. The new subscription service was centered on ITV sport, which allowed the subscriber to follow the Champions League, the Football League and the League Cup. This service was welcomed as "the key driving force behind take-up of pay television". During the first months after this launch, ITV Digital attracted a large number of new subscribers. However, because of the inability to exploit the technological support provided by BSkyB to UK families, in the last quarter of the year the number of subscribers sharply dropped. In autumn, after the unexpected downturn in the advertising market due to September 11, Carlton and Granada announced a reorganization of the platform. Finally, after having invested more than £800 million and with 1.2 million subscribers, in March 2002 the company announced the failure and put the platform in liquidation.

A Resource Based View Analysis

The investigation of BSkyB's and ITV Digital's ventures in the UK digital television market can be easily conducted with reference to the Resource Based View (Wernerfelt, 1984; Dierickx & Cool, 1989; Barney, 1986, 1991). According to this theory, resources are considered the main source of sustainable competitive advantage for a firm. In particular, Barney (1991) underlines that a key resource must be:

- *valuable*, in the sense that it exploits opportunities and/or neutralities in a firm environment;
- *rare* among a firm's current and potential competition;
- *imperfectly imitable* (either through unique historical conditions, causal ambiguity or social complexity) and
- *without* strategically equivalent *substitutes*.

Collins and Montgomery (1995) distinguish material, immaterial resources and organization capabilities. The first are tangible and easily identifiable. Reputation, brands, culture, and knowledge represent immaterial resources. Organization capabilities mainly refer to the firm's ability to combine such resources in planning and implementing its own strategy. In order to find a successful position in its market a firm has to elaborate an appropriate strategy

taking into serious account its strengths and weaknesses. This becomes particularly relevant when a company seeks to enter in open competition with the industry leader. A company first has to bear in mind that each competitive position results from a specific strategic time path. In other words, "strategic asset stocks are accumulated by choosing appropriate time paths of resource flows over a period of time" (Dierichx & Cool, 1989:1506). For example, R&D represents the stock of know-how at a particular moment in time. R&D spending represents the current increase in value of the available resources. "It follows that a key dimension of strategy formulation may be identified in the task of making appropriate choices about strategic expenditure with a view to accumulating required resources and skills" (Dierichx & Cool, 1990:1506).

We can sum up saying that a simple passive imitation of the resources applied by another company, without taking into account the strategic implementation aspect of those resources, can not lead to the success of the imitating company. Fist of all, an organization should self-evaluate its resources and estimate the time needed to develop them. In a second step, by considering its potentialities, the firm can find its position in the market. If its resources are limited it has to choose a particular niche, to compete with the leader will be a waste of energy.

This chapter compares the case of a successful and an ineffective company: BSkyB and ITV Digital. Thanks to a merger between Sky and British Broadcasting Television Satellite (BSB), BSkyB entered in the digital television sector in 1990 and nowadays it is a leading company in this sector. BSkyB could first enjoy a reliable set of monetary resources in order to develop new technologies: Murdoch believed in digital television and invested on it (Horsman, 1997). Customers needed to be stimulated to acquire the new technology. Monetary and technological resources allowed BSkyB to implement a sales promotion campaign by giving free set-top boxes in exchange of an annual subscription of basic packages. BSkyB entered the analogue television sector at the end of the 80's. The experience and the know-how built in those years let the company diversify successfully in the digital television market. In particular, during those years BSkyB made appropriate choices about strategic expenditures (e.g. advertising spending, R&D) to accumulate an intangible key resource: brand loyalty. The company gained dealer loyalty and, on the other hand, customers' trust. Today BSkyB knows that "as [it] is the case with physical plant and equipment, all asset stocks "decay" in the absence of adequate "maintenance" expenditure. R&D know-how depreciates over time because of technological obsolescence; brand awareness erodes because consumers forget" (Barney, 1991:508). For this reason, BSkyB heavily invests in R&D and in marketing activities in order to maintain and to increase its resources.

As ITV Digital entered the digital television market, it immediately positioned itself as BSkyB's direct competitor. ITV Digital did not enjoy previous experience in the television market. This did not allow the company to

feature the same brand loyalty BSkyB had and its know-how still needed to be built. As Barney (1991) stated "an MBA student may not accumulate the same stock of knowledge in a one-year program as in a two-year program, even if all inputs other than time are doubled". Considering brand loyalty, for example, even if ITV Digital launched a massive advertising campaign, the company could not reach BSkyB customers' base.

Figure 1 illustrates, on one side, the resources that led BSkyB to attain its leading competitive position and, on the other, the lack of resources featuring ITV Digital that eventually led to its failure.

BSkyB was the first company to enter the digital television market, ITV Digital followed but it showed that jumping into another firm's strategic position might not be easy, and it failed because BSkyB protected its position (Haveman 1993).

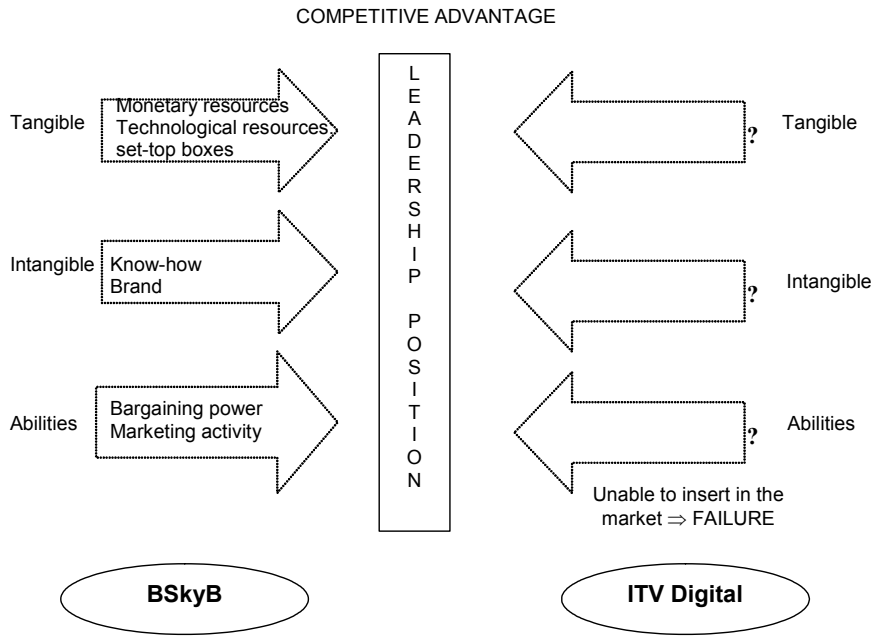

Figure 1. Comparison of Resources Availability for BSkyB and ITV Digital

An Institutional Theory Analysis

The Resource-Based View analysis allowed ascertaining the levers, which BSkyB could rely on in order to reinforce its strategic position. These factors were both firm-specific, such as initial firm market share, initial profitability and marketing expenditures, and resource-specific, such as a firm brand and

knowledge. On the other hand, ITV Digital merely assumed a strategic position, which, in Haveman's terms (1993) could be labeled "following the leader strategy". This proved to be an unsuccessful strategic move for ITV Digital. The reasons why it produced unconstructive outcomes could be assessed through the lenses of the Institutional Theory. This is a very broad theory, which aims at investigating instances of imitation among organizations. Among the many contributors Institutional Theory numbers, Powell and DiMaggio (1983) appear to be those, whose reflections best apply to the analysis of ITV Digital's strategic failure. According to these authors, successful organizations are regarded as the benchmark, which other organizations are likely to imitate. Success is, however, a devious term. It can indeed refer to many organizational circumstances, such as high profitability, high productivity, high reputation, or centrality within the industry. Cognitive motives account to assess the relevance of such organizational aspects, since what appears to be salient in an industry may not hold in another (Haveman, 1993). Organizations are induced to imitate successful organizations' decisions and actions in the attempt to attain such success at their turn or, more generally, legitimacy.

The process of imitation actually only refers to legitimacy motives. Organizations are driven by collective rather than individual rationality. They assume that the reproduction of successful organizations' structures, practices, processes or strategies might ease the attainment of higher returns. Actual success, however, rests upon competitive, rather than legitimacy factors. The lack of a thorough assessment of the internal resources an organization might hinge on and of the environmental forces that shape competition in an industry might undermine the attainment of success. Imitating organizations feature, therefore, a higher probability of failure with respect to the organizations they imitate, right because of their strategic and organizational choices are not driven by rational and individual assessment of the resources they dispose and of the environmental conditions, which they are surrounded by.

Institutional theory usually applies to industrial circumstances where a substantial number of organizations compete. This might downgrade its applicability to the instance presented in this chapter. It is however worthwhile highlighting that the digital television market prevents the occurrence of competition among a large number of firms. On the one side, this occurs because of the strict legal environment, which sets high barriers to entry, by defining codes of competition that few firms can thoroughly comply with. On the other, the digital television market itself does not allow a pure open competition, since consumers' needs are substantially homogeneous. This prevents the differentiation of supply, hence avoiding the co-existence of many digital television firms within a given national system, since a single company can wholly fulfill demand. Furthermore, BSkyB and ITV Digital wholly embody the characteristics institutional theory ascribes to industry leader and

followers. The application of DiMaggio and Powell's theory to the cases of BSkyB and ITV Digital can therefore be justified.

ITV Digital's venture in the UK digital television market can be mostly regarded as a replication of BSkyB's strategic choices, still under its old brand, i.e. ONdigital. ONdigital's launch can be judged as the first mimetic move the company undertook, in all probability to avoid the very likely loss of market share and of competitive advantage over BSkyB. However, technical limitations, problems related to distribution of set-top boxes and the poorer quality of the service ONdigital provided with respect to BSkyB's did not grant the company the success it strove for. Mimetic moves continued with main concern to programming, with the heavy investment ONdigital made to acquire football rights. Even this choice revealed itself as unsuccessful because of internal dissents and because of the financial efforts undertaken by the company that eventually led it to bankruptcy. All this happened despite the ultimate marketing move of re-branding the company as ITV Digital.

ONdigital/ITV Digital strategic moves in most cases replicated what BSkyB had previously undertaken. The Resource-Based View analysis already revealed that ITV Digital could not rely on the same set of assets BSkyB disposed of, either in concrete (e.g. financial resources) or soft terms (e.g. brand). The blind replication of industry leader's moves often features followers' strategy. In most cases, this choice is likely to lead followers to death (as in the case of ITV Digital) right because they cannot lever over the same resources leaders can rely on. Followers' survival chances can increase only when they can perform their activities in specific niches within the industry, which prevent them to compete directly with more powerful companies. ITV Digital might have enhanced its probability of success if it had tailored its strategy on the specific domain, which it was rooted in, i.e. the terrestrial digital television market. This might have prevented ITV Digital to come into open competition with BSkyB, thus exploiting its poorer set of resources in a more efficient manner. Such resources could have actually been employed to enhance the technical efficiency of the telecommunication devices they provided or to provide higher-standard programs and services, rather than to follow and replicate BSkyB's business strategy on a broader competitive environment that paradoxically could not be accessed by another company.

BSkyB and ITV Digital: Successful Strategies and Managerial Mistakes

Many factors can account to explain the failure of the UK terrestrial digital platform. In particular, the superiority in channel availability and the supply of interactive services, both favored by the free distribution of set-top boxes, forced ITV Digital to compete directly with the satellite competitor. This situation combined to the heavy investment in football contracts apparently led ITV Digital to its failure.

Nevertheless some critics argued that the reason of the failure was essentially a result of a sequence of managerial mistakes:

1. *Technology*: the availability of decoders was initially poor and they could be easily counterfeited. Moreover the digital terrestrial signal proved patchy, failing to cover large parts of Britain.
2. *Branding:* ONdigital spent £90 millions to promote itself. Two years later the expensive re-branding exercise forced the company to waste millions on brand advertising.
3. *Programming:* instead of taking on the middle England market with quality drama and cultural programming, Carlton and Granada used ONdigital as a platform to push their own, sub-standard digital channels. As a consequence, regionality, commercial creativity and diversity, which were the usual standard for ITV, were sacrificed to fight head-to-head against BSkyB. The restricted channel portfolio offered a package similar to an analogue service for a digital price. A clear example is given by the acquisition of the First Division football rights. This misunderstanding towards the demand negatively influenced the consumer perception, expressed by the high number of churn (30%).

Besides, other crisis factors can be advanced (Richeri, 2004):

- the low penetration: only 60% of the population could access the ITV Digital services, with a high limitation of potential subscribers;
- a restricted channels' supply in comparison with the BSkyB supply: ITV Digital supplied to its subscribers only 30 channels, while BSkyB over 300 channels;
- a high debt limiting the opportunity to launch a diversified supply and promotion strategy: in fact, Carlton and Granada, the two ITV Digital holders, accumulated a debt of 800 millions of pounds and they did not have any more possibility of investment;
- the dissimilar number of subscribers attracted by the two companies: by 2001, BSkyB had already reached over 5 million subscribers, while ITV Digital could rely on a lower number of people and on a minor financial funds disposability. In addition, the average annual expenditure per subscriber of ITV Digital in 2001 was around £200, while BSkyB's was around £300.

BSkyB acts for a benchmark for multi-channel and multi-service television platform at European level. To understand its success, it is primarily useful to remember that BSkyB operates in the industry as channel provider, distributor of television services and direct-to-home (DTH) platform operator. It competes in the following television sectors:

1. satellite television;
2. cable television;
3. terrestrial television.

The strategy of BSkyB is to create "added value by maintaining and extending […] (its) position as Britain's leading digital TV platform and multi-channel content provider" (Sky, 2001). BSkyB especially invests – as shown afterwards – in programming, considered very important to generate subscriptions and foster viewers' loyalty. The aim of the company is to supply a reasonable, ever improving, broad range of programs, and BSkyB is indeed a multi-channel and multi-service television platform, whose supply is composed by various programs and services. In particular, interactive services can be 1) linked to the programming (enhanced TV), which allow the viewers to send e-mail, choose the different angles, televote, memorize the channel they prefer, and 2) linked to t-commerce services, which allow to shop, play, bet and administrate one's own finance.

According to Jon Florsheim (2002), chief executive officer of Sky Interactive Limited[39], BSkyB decided to bet more on enhanced TV than on transitive services, because it allows to: a) generate revenues, b) improve the supply, and c) retain customers within a specific channel or within the platform, reducing the churn.

Normally interactive services represent an important source of funding for the company. The main revenues derive from:

1. premium rate telephone charges in connection with viewers' usage of its service;
2. revenue sharing in t-commerce transactions completed on the platform;
3. advertising;
4. tenancy and technology fees charged to content providers that supply services on the platform.

To make its products and services successful, BSkyB makes important investments in marketing. In BSkyB's strategy, marketing is a crucial lever. The aim of this strategy is that the client guides the share price of the company. The brand ambition of BSkyB is "to make every day extraordinary[40] for every one of the customers" (Sky, 2002). Using a marketing approach diversified on the basis of clients, the company tries to understand the desires and needs of different targets and to use different languages for the many channels (for

[39] Sky Interactive Limited, a subsidiary of BSkyB, delivers digitally transmitted interactive services to viewers in the United Kingdom.

[40] To specify the concept "extraordinary day" Sky (2002) says: "just think: a generation ago, the business that we work in didn't even exist. The technology we deploy didn't exist. This is all brand—new staff, and we're right at the front of it. So let's continue to make every day extraordinary for every one of our customers".

example it tries to speak to the sport channels' subscribers with the language of sport etc.). Among its marketing activities BSkyB provides free digital satellite equipment to new customers, the installation of the digi-box and, most of all, qualified call centers.

Nowadays customers do not only look for goods or services, they demand a much more holistic service supply, which range from information about the way a product can be best employed, to delivery, installation, updating, repair, maintenance and correction of the products they have bought. In a customer relationship that goes beyond a single transaction of goods and services, the product itself becomes just one element in the total ongoing service offered. BSkyB's management was able to understand that what really counts is the ability of the firm, regardless of its position in the distribution channel, to manage the additional elements of the offering better than its competitors. This intuition was a key determinant for its success.

Discussion

The previous analysis leads to important reflections on the two cases considered in this chapter: BskyB operates as a channel provider and distributor of television services, defining its position as multi-channel and multi-service company. It accounts as a significant example of how it is possible to realize high profits even for companies providing an ongoing service offering and operating in a turbulent environment such as the high tech industry. On the other hand, ITV renounced to its regional character and commercial creativity in order to compete against BSkyB, a decision which led to a misunderstanding in the customers' perception of the offering's quality.

Most strategic prescriptions merely redefine the ways companies build advantages over the competition. This has been the strategic objective of many firms, and nothing is wrong with this objective. A company needs advantages over the competition to sustain itself in the marketplace. However, despite tremendous efforts, companies often achieve no more than incremental improvements—imitation and not innovation (Kim & Mauborgne, 1997). This is the case of ITV Digital, which aimed at competing with the greatest UK digital service provider, facing in this way difficulties in particular due to numerous technical limitations.

Within high tech firms, customer decisions about the use of a product or service play a fundamental, strategic role. In recent years the marketing discipline has regarded market driven activity (i.e. Jaworski & Kohli, 1993), customer-leading (i.e. Day, 1990) and pioneering (i.e. Golder & Tellis, 1993) as appropriate paradigms for achieving long and short terms success. Nevertheless these marketing approaches could not be considered sufficient to address the unique characteristics of high technology industries and markets. Marketing in these industries requires a broader and more proactive strategic approach, defined as market driving: this concerns the ability of a firm to lead

fundamental changes in the evolution of industry conditions by influencing the value creation process at product, market and industry level. Market driving organizations create value by engaging in innovative activities both within and outside the organization (Deshpande, 2000).

In this prospective, BSkyB seriously invests in program acquisition, which represents some 57% of its whole operating expenses. Such investment aims at guaranteeing the subscribers exclusive and attractive programming, while trying to reduce the possible entry of new competitors in the same industry, negotiating as many agreements in exclusive rights as possible.

The interactivity characteristic is stressed by the advent of the interactive service which can be linked to the programming. Pagani (2003) states that the gradual control of content, as well as the strengthening of the control over the final users' access account as critical factors for achieving and holding a long-lasting competitive position (Barney, 1991). Digital television players will though often need to decide whether to focus primarily on consumer ownership or content ownership. It is very difficult to maintain a strong position in both. The failure of ITV Digital is mainly due to a lack of focus both on content and consumer ownership. The company provided only a limited number of channels and could reach only a limited number of subscribers.

In order to manage and guide subscribers' choices, to consolidate customer retention to a program bouquet and to allow the personalization of program supply with reference to users' needs BSkyB always bears in mind families' main characteristics. Its supply takes two important issues into account: on the one hand, the expenditure for accessing services (e.g. satellite antenna, set-top box, …); on the other, the expenditure for using the services (e.g. subscription). Digital television strengthens the relationship between the supply and the demand of programs: users no more pay for watching a flow of programs; they rather watch and pay for specific and previously chosen programs. Therefore, a digital television company can successfully maximize its revenues only if its content and service supply thoroughly matches single consumers' demand.

In the light of the above-presented details, it is possible to argue that BSkyB's success mainly springs from the following factors, enabled by a highly capable management:

a. offer of quality and diversification from the traditional free to air supply in the United Kingdom;
b. promotion and marketing ability;
c. availability of easy and convenient reception equipment;
d. a capillary network of subscription, sale and reception equipment installation outlets;
e. a broad and innovative supply of interactive services.

Conclusion

Although illustrating an interesting comparison between two digital television companies, that are examples of the new media economy business, this chapter features some limitations. First, the considered time framework appears to be too limited to fruitfully seize the whole array of factors that might lead to the success or failure of a company in the digital television industry. Second, a lack of economic and financial data concerning ONdigital/ITV Digital's venture make this analysis defective. Some records about BSkyB strategy actually had to be reduced in order to allow the thorough comparison of the two companies. For these reasons further research on this topic is suggested.

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Growth in a Convergent World: The Bundle of TV and Telephone Services on the Fiber Optic Network

Marco Gambaro

In the last ten years, the telecommunication industry has been radically transformed by the deregulation processes in its sector, by the euphoria of the new economy which gave the illusion of obtaining success aside from solidity of the business model, and by the disillusion and crisis following the explosion of the speculative bubble which had brought upward all the high-tech stocks. Technological innovations and enhanced competition drove the prevailing falling trends in telecommunication prices and fuelled growth in consumption mostly in mobile services. In the fixed market the broadband connections emerged as the fastest developing area in conjunction with the internet diffusion. The broadband diffusion is now viewed as an important infrastructure for developments in communications exchanges and information consumption of digital contents that in turn can fuel the economic growth.

The scientific literature embraces several issues related to broadband, ranging from the diffusion factors to the relationship between market structure and adoption, till the complementarity/substitutability with adjacent markets like cable TV, pay TV. Distaso, Lupi and Malenti (2005) emphasize the role of stronger competition across technologies as the main driver to stimulate broadband adoption with empirical evidence based on data for 14 European countries. Conversely, the enhanced competition within the ADSL technology does not seem to have played a similar role and in conclusion they find positive synergies to be exploited between policies directed to induce more inter platform competition and those directed towards local loop unbundling.

Hoffler (2004) finds similar results, but points out that parallel infrastructures incorporate opposing welfare effects. The gain from accelerating the broadband penetration and the reduction of monopoly power might be outweighed by the inefficient duplication of an existing infrastructure. The last effect can be mitigated as the services offered from different networks evolve in different directions.

Several American studies confirm these results (Hazlett, 2005; Grubesic & Murray, 2004; Savage & Wirth, 2005). Aron and Burnstein (2003) examine the influence of availability, competition, and demographics on the adoption of broadband technology in US. Their econometric results indicate that after controlling for the demand and cost influences on adoption, inter-modal competition drives increased penetration in a state.

Among European states there is a general consensus that infrastructure based competition is desirable in telecommunications and has an important role in delivering innovations such as broadband (Maldoom, et al., 2003). However, public statements from national regulation authorities about the benefits of infrastructure competition have not always been matched by coherent regulatory policy designed to facilitate such competition. If broadband deployment in Europe has been too slow, regulatory policy is a key area where one should look for an explanation.

In a paper on determinants of digital divide the cross country analysis, Chinn and Fairlie (2004) show that computers and internet diffusion are positively linked with broadband adoption, a telecommunication (TLC) competition over the usual factors as income, literacy and infrastructure availability.

While evolving toward broadband, fixed telecommunication infrastructure suffers from the mobile competition. Fixed to mobile line substitution is a reality today; market research suggests that 15% of households in Western Europe were mobile only at the end of 2003, an increase of three percentage points over the year (JPMorgan, 2004). This is driven by a general increase in usage and the falling price differential between the cost of a mobile and the equivalent fixed call. Line loss is currently running at 4% per annum in the US where there is little difference in the price of fixed long-distance and mobile calls for consumers.

Rising broadband penetration could be seen as a mitigating factor giving consumers and businesses an alternative reason to maintain a fixed connection. However in Korea, the most developed broadband market in the world, high broadband penetration (nearly 80%) has deferred rather than halted fixed line loss.

In this context, e.biscom constitutes a positive model because it found a good strategy which aimed at the construction of a large-band network, so becoming the second Italian phone operator, with its own network. This business model has different features: the main technological aspect is the realization of a fiber optic cable network with an IP architecture, consenting to bring phone data and TV signals, end to end along the network itself. It's a network architecture experimented by other operators (the USA next generation telcos) for the long distance part, which e.biscom extended also to the last mile connection, up to the final users. This network constitutes the main power point of this company because it offers lower management and service configuration costs.

After some initial hesitations, e.biscom concentrated on the joint offer of phone, TV and data services, sold in bundle, so obtaining an increase in average revenues per subscriber and a reduction in the investment pay back time. Basic broadband and premium broadband can in some view be considered separate market and therefore the price and availability of basic broadband for internet

access does not constrain the price that may be charged for the premium broadband that allow for interactive TV services (Kjetil, et al., 2004).

There has been an evolution in the vertical integration: while at the beginning the company tried to control all the business aspects with investments in content production and the creation of a specialized purchasing net, in a second time a vertical specialization in the managing of the net services was selected, with agreements with external providers for TV content availability, but also for the laying of cables, in which e.biscom has not been involved since 2003.

In spite of the crisis of its sector starting from 2001, e.biscom has rapidly grown, passing from 42 million € in 2000 to 529 million € in 2003 and over 700 million € in 2004. In this fast growth there was an evolution both in the company structure and in the management organization: from a business management based on the ability of the founding partners to a more managerial organization with more structured processes and better activity control, adding to this a strong aiming at innovation and flexible organization.

The idea of triple play spread through the Europe as technology evolved and enhanced the bandwidth capability of ADSL up to a full video delivery. In 2004 both British Telecom in UK and Deutsche Telekom in Germany started some IP television operations to offer on their fixed network broadband internet access, multi-channel video services and the traditional telephony. In France the broadband market is particularly promising because satellite and cable have had difficulty penetrating city centers, where laws ban dishes on older buildings and apartment dwellers have to win approval to install cable or satellite. It is Free, a new entrant, that leads the triple play race. Free is an internet service provider grown with free internet access that offer ADSL services on shared access lines with the incumbent and use triple play to differentiate service offer.

The Initial Strategy in the Italian Market

Italy exhibits a mature telecommunication market with high fixed line penetration. From the deregulation process during the last decade a few main competitors emerged while the incumbent retains the main share of the market. Together with Finland, Italy is leader in mobile diffusion due to the strong initial competition and probably the lacks in the fixed telephone service. The fixed network topology with a high number of local exchanges keeps short the local loop length compared with other European countries and makes the ADSL deployment particularly feasible. The personal computers penetration rate is lower when compared to the European average since the prevailing of small enterprises slowed the early business adoption which has though accelerated in the last three years.

Within the television area satellite penetration is low and before Fastweb there was no cable operator. Pay television suffers in fact from the richness of free-TV offers both in sport and in film programming (See Table 1).

Table 1. Features of the Italian Market in 2003

INDICATORS	
Total Population (millions)	57.5
Total Household (millions)	22.5
Fixed telephony (millions)	
-number of pstn lines	21.4
-lines/households	94.8%
Mobile telephony	
-number of users	56.4
-users/population	98.1%
-users/households	2.5
Sat TV subscribers (millions)	2.5
Broadband subscribers (millions)	2.5
Pc households penetration rate	51%
Internet users (millions)	22.6

The e.Biscom business idea was to create a vertical integrated operator able to exploit the opportunities of the convergence process of Telecommunications, Information Technology and Media. E.Biscom is the only "triple player" on the Italian market, the only operator able to offer phone services, Internet broadband connection and video services using a single technological platform, and making the offer of value added services feasible.

The core of e.Biscom's differentiation strategy is the creation of its own telecommunication network, independent from the one of the incumbent Telecom Italia. The innovation of e.Biscom proposal was the creation of an IP based network, on which the services offered (TV, Internet, Phone) are conveyed through a single integrated technological platform.

Bringing the fiber directly to the homes makes economic sense in the Italian market because of the high concentration of buildings and wealth. The average apartment block in Milan has 16 flats and most Italian cities are comprised of multi-dwelling units. To achieve a pay back period of two years the level of take up per building needs to be at least 18%.

The opportunities coming from convergence and the uncertainty on the profitability of the different market segments pushed e.Biscom to fill all the stages of the value chain, internally providing for network management and implementation, customers' research and care, service management, and content production. The dynamic environment constituted a further spur to pursue any business activity that showed potential synergies. E.Biscom revealed to be the first mover in many business segments thanks to its flexible framework and its entrepreneurial attitude.

At its start-up, the business of e.Biscom was supposed to have many potential synergies with the emerging third generation of mobile telephony. Shortly afterwards e.Biscom joined the Dix.it consortium in order to purchase an UMTS license. A few month before the licenses auction, a deeper analysis of UMTS business opportunities and the very long pay back period of the required investments forced e.Biscom to leave the consortium.

During the early launch phase e.Biscom tried to rapidly increase its number of users in order to reach the critical mass of users needed to sustain the high fixed costs of the fiber network and to engender positive direct externalities among vas (value added services) users. To reach this goal the sales force was broken down in salesmen, telesales, web-sales and licensed shops. Besides these sales channels e.Biscom opened eVoci, a chain of consumer electronics shops focused on fixed and mobile telephony and on high tech devices. EVoci was supposed to be the last stage of e.Biscom's integrated value chain: the services and devices commercialization. 100 shops were planned to be opened within 2003.

The offering followed the usual distinction between residential customers and business customers. The residential offer included three kinds of services: a voice over IP service, a broadband Internet access service and video (free or on demand) services. In the starting phase the Voip service arose several technical problems, anyway its quality is by now in line with traditional phone services. The Vod service, launched in 2001, included contents created by e.Biscom through the controlled company e.Bismedia.

The business offer was split in three customer categories: large companies, small medium companies (SME) and SOHO (small office/ home office). Among a number of services e.Biscom provided phone services, broadband Internet services, virtual private network and video-surveillance.

The strategy of service differentiation made e.Biscom focus on high spender customers, strongly oriented to technology innovation and Vas services. According to this vision, the early stages of service providing privileged cities with higher average income per person. E.Biscom tried to widen its range of services by promoting all inclusive flat subscriptions. This strategy differentiated from the effort of other competitors to increase the number of users by using aggressive price policies and pay-per-use policies, useful to attract occasional Internet users, who are reluctant to pay a flat rate.

The extensive financial funds required to pursue this wide range strategy were provided by the March 2002 IPO at the Milan stock exchange, when the financial bubble on technology stocks was still to blow up.

The key successful factor of e.Biscom's project lied on the innovation of an integrated offer of services formerly perceived as completely separated by the consumer. Moreover, basing this innovative approach on an independent network gave e.Biscom full autonomy in the choice of its price and supply policies, in order to address directly the final customer. This bottom-up approach let e.Biscom develop its own "cost plus pricing" price policy, so as to

avoid incumbent's retail-minus policy, which often leads to margin erosion in the long run. Also, the scope for directly billing the final user reduced the churn rate and increased customers' fidelity. Furthermore, the conspicuous investments undertaken to implement the network, the rank of customers reached in the main cities, and the first mover advantage have built high barriers to the entrance of competitors with a "follow the leader" strategy.

E.Biscom has been the first player to understand that the convergence of services required a convergent approach toward the whole network infrastructure, and that the integration instrument could be an open protocol such as the IP. Using a single vehicle to convey audio, video and data can reduce management and maintenance costs, and make the creation of Vas easier. Moreover, using a single platform reduces the testing period and so shortens the time to market of e.Biscom's services in comparisons to the incumbent's and to other non-integrated operators.

In order to rapidly reach the scale economies needed to support the high fixed costs of building an alternative telecommunication network e.Biscom made a joint venture with AEM, the service carrier of the municipality of Milan which was already endowed with a 600 Km dark fiber network in Milan. The fiber-to-the-home strategy was also assisted by the planning framework of many Italian cities, which are densely populated and where many persons can be reached with few works on the building.

Evolution in Strategies

This wide-range strategy was financed through the placing of e.Biscom securities in the New Market at Milan Stock Exchange in March 2000, bringing in 1.6 billion €. The blowing-out of the speculative bubble on high-tech stocks caused difficulties in finding further resources in order to finance the high investments required by the development of the network in Italy and abroad. Moreover, the synergies deriving from a complete integration resulted lower than expected.

So the company had to operate in heterogeneous markets where competitive dynamics are not uniform, rules are evolving and operators work with different costs and business models and have consolidated abilities and operative routines.

In this situation, the company chose to focus its resources on its own core business, as to say the supply of phone services, TV and access to the Internet in Italy. In 2003 the company was re-organized and some non-strategic activities were abandoned.

The cease of the activity of content production was realized thanks to the agreements with RAI, Sky Italia and many movie majors, who bought it. The agreement with RAI includes the creation in joint-venture of Raiclick, a company that offers 3500 contents available through a subscription fee. The availability of the Sky content pack through the e.biscom platform derives from

the antitrust regulation, regarding the fusion of Tele+ and Stream, obliging the pay TV operator to put its Premium contents at disposal of the digital operators on non-satellite platform, as to say TV service suppliers through broadband telecom network and digital terrestrial television.

The change of the setting has brought to a change of the strategy of offering access to its own service platform through optic fiber to all its users. Starting from 2001, the xDSL technology developments allowed this system to reach the band width of 4mb/s, necessary to supply phone-TV contents. The focus on xDSL technology is due to its installation and managing low costs.

In fiber optic connection the cost per client is around 1200 € including a variable component due mainly to set-top-box and installation and a fixed component due to a component of international bandwidth, the catalyst (router) necessary to connect the building to the network infrastructure. Each catalyst can support 24 client connections and cost around 3000 €. Considering a subscription rate of 18-20% per catalyst, the incidence per client is around 500 €. With an ARPU (average revenue per user) of 900 € and a gross margin of 650 € per year the pay back period of the specific fixed cost is limited to two years.

In ADSL connection the cost per client is remarkably lower. With the last mile unbundling e.Biscom must install in incumbent local exchange an ADSL equipment with 500 slots. Moreover each new subscriber requires modem and set-top-box (180 €), installation cost and the 8,3 € monthly rent of unbundled local line from the incumbent. The total investment costs per client are around 450 euro and the gross margins are slightly lower than in fiber optic environment due to the monthly fee.

Since there is no product and price differentiation between the two technologies, the ADSL ARPU is the same than fiber optic and the pay back is shorter with ADSL.

In this framework the proportion of ADSL subscribers rose from 22% in 2001 to 57% in 2004 and is expected to grow further following the geographical expansion in regions not covered with fiber optic network.

Table 2. Italian Broadband Market

Broadband Access	2001		2002		2003		2004	
Telecom Italia retail	247	49.8%	630	58.1%	1504	61.0%	2584	61.5%
Telecom Italia wholesale	143	28.8%	175	16.1%	562	22.8%	797	19.0%
e.Biscom	63	12.7%	220	20.3%	331	13.4%	501	11.9%
Wind unbundling	38	7.7%	54	5.0%	58	2.4%	260	6.2%
Others	5	1.0%	5	0.5%	9	0.4%	57	1.4%
Totals	496	100.0%	1084	100.0%	2464	100.0%	4199	100.0%

During the years e.Biscom grew with the market maintaining its market share. Other players reselling ADSL from Telecom Italia wholesale offer lost market

share over the years. After initial hesitations the incumbent drew the broadband diffusion and gained market share with its direct offer (See Table 2).
In 2003 the business represented 15% of e.Biscom customers and 65% of total revenues. However, with video services the residential market is now growing faster. In the last years most part of e.Biscom clients have been families and 30% of them buys video services and shows higher average revenues.

Corporate Structure Evolution and Organizational Development

E.biscom was founded as a partnership of entrepreneurs and managers coming from media and telecommunication sectors and a joint venture with Milan utility AEM which, through its controlled company Metroweb, manages a 600 km dark fiber optic network in Milan metropolitan area (See Figure 1).

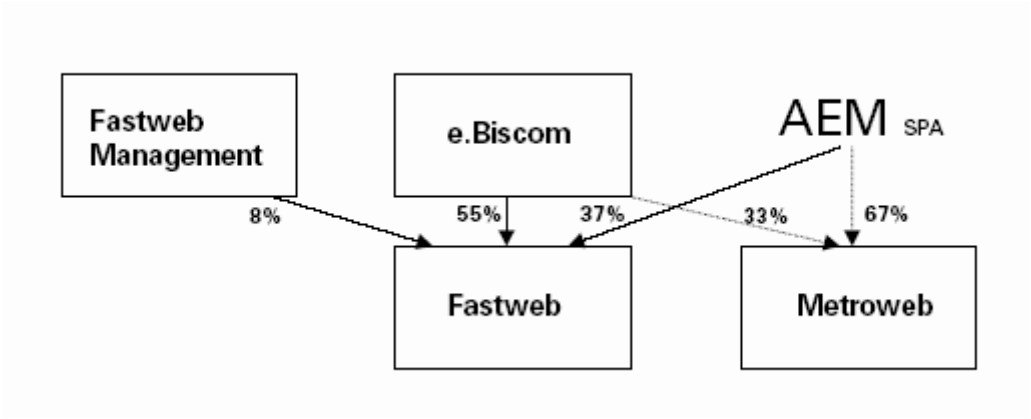

Figure 1. The Joint Venture between e.Biscom and AEM

Moreover, since AEM often digs for the maintenance of gas and electrical network, the excavation cost to lay underground the fiber can be significantly reduced due to scope economies. In the e.Biscom group, Metroweb and Fastweb were committed to network building and service management, while Videoportal (later transformed in Ebismedia) was devoted to content acquisition production and aggregation. Inside Ebismedia there was the first Italian on line journal "Il Nuovo", the news agency ApBiscom, the online videogame platform "GameOn". The framework was completed with eVoci, a store chain that planned to open hundreds of outlets to sell all e.Biscom product and services with the complements of other technological devices and customer support services.

E.Biscom planned also to build a large range of specific services for business clients through the subsidiary B2Business. Eventually, e.Biscom aimed at expanding its business model in other European markets and in September 2000 it acquired 80% of Hansenet, a TLC local carrier in Hamburg (Germany), offering mainly narrowband services but with a 1800 km network

infrastructure. After two years though, the growth was too slow to support such an ambitious strategy and the changing in stock exchange climate made difficult to find new capital to sustain the investment plan. The strategy was than narrowed to get a stronger position in the Italian market, focusing more closely on the core activities of network and services management. Therefore, several non strategic activities were divested. Hansanet and ApBiscom were transferred to Telecom Italia, and il Nuovo was sold to HDC (a market research group). The content production was abandoned following agreements with majors for right acquisition and a joint venture with Italian public television Rai to exploit its huge archive. In March 2003 e.Biscom terminated the joint venture with AEM and the share in Metroweb was divested in exchange for the AEM shareholding in e.Biscom. However, the co-operation for the use of fiber infrastructure continued with a commercial agreement.

Finally, to complete the simplification of the group structure and to enhance the management flexibility, in April 2004 the fusion of e.Biscom and Fasweb was approved bringing together all the activities relating to the core business. The integration simplified the coordination process, reduced some costs eliminating duplications in staff structures and brought some fiscal advantages.

The content distribution remains in eBismedia. Since November 2001, when the commercial offer with 450 video titles was started, there has been a continuous growth in content availability and in June 2004 the video on demand offer through the brand OnTV arrived at 1200 among films and documentaries.

The e.Biscom video supply, like any standard cable TV, includes 8 free to the air TV channels, a slim basic package included in the subscription, some option thematic channels and the block of premium film and sport channels obtained from Sky Italia at a retail minus intermediate price.

Starting in July 2001 e.Biscom controls a 40% share in Raiclick, a joint venture with Rai that sells video contents taken from the huge archive of the Italian public television. The 3500 videos were first sold on a pay per use basis now transformed in an "all you can eat" formula with a monthly subscription fee and include films, series, classical music, ballets, and entertainment for the 99.000 subscribers as to June 2004.

E.Voci, fully owned by the group, was intended to develop in a large store chain selling consumer electronics, mobile and fixed telephone devices, hi-tech products, and computers. But the slowdown of hi-tech industries, the e.Biscom exit from 3rd generation mobile phone consortium and the narrowing of the strategy on core business activities drove to the downsizing of the retail presence and now there is a mere 7 stores and 10 affiliates with limited growth prospects. The shifting in strategy and particularly the reduction in vertical integration degree pushed the reshaping of the organization structure (See Figure 2).

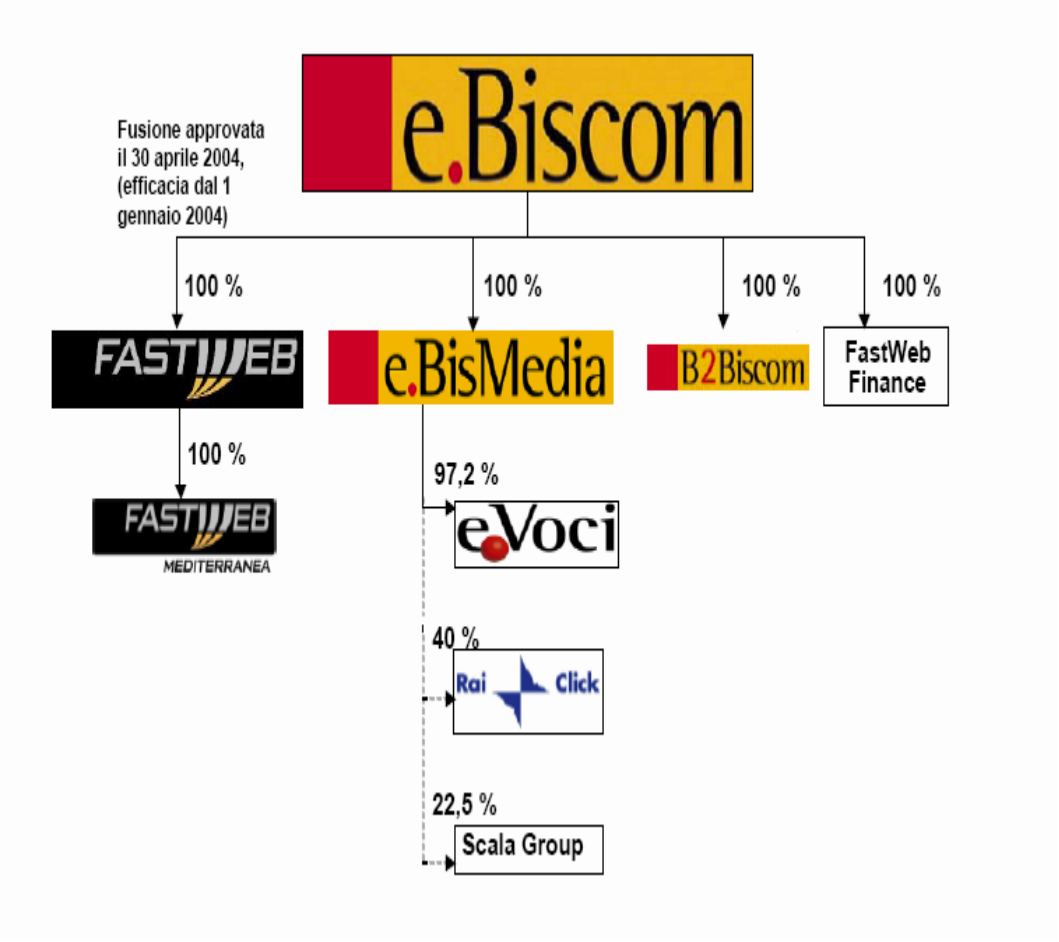

Figure 2. The Corporate Structure of e.Biscom as to June 2004

In the first stage of development e.Biscom was a typical start up company moving in a changing and innovative environment. The founding partners impressed an entrepreneurial approach to the activity within an informal structure where discretionary power was prevailing. The goal was to get a flexible organization capable to react quickly to external input in a changing environment.

In the second stage, following changes in strategy and group reorganization, e.Biscom moved to a more structured organization in which the managerial component prevailed over the entrepreneurial one. This time the goal was to have a more global and long range vision able to support a continuous and organic growth leaving aside an approach based on specific project assembled together. The human resource department implemented a more formal process, an internal audit department was set up and the cost control was improved

through a more designed budgetting process. At the same time several inter-functional groups were created to maintain good lateral integration.

Essentially e.Biscom moved from a top-down leadership where the actions of the partners originated the whole activity to a bottom-up leadership with a better definition of the roles and tasks of middle management. The aim was to achieve a more structured organization without loosing the speed and the flexibility which were among the critical success factors of the start up phase.

E.biscom moved from a focus on network and technology to a focus on the customer requirements. Before the whole firm process was seen in a value chain mode, while now a value network model prevails where the client is put in the centre of the network. Following this vision, the firm internalized the customer care department revising deeply roles and organizational configuration. The whole reorganization process was centered particularly on soft components like corporate culture, integration devices, values and priorities, while the hard structure remained substantially the original one with five core departments: commercial for the whole selling process, network design and management, technology with IT and operations and finally staff that includes finance, communication, human resources and regulation affairs.

Performances and Regulatory Issues

At the end of 2004 revenues were grown at 710 million Euros but the Ebit remained negative for the high level of capital expenditure and the consequent amortization (See Table 3). Revenues had been growing at 50% per year and from 2003 the revenue per employees grew at a level compatible with a stable telecommunication business; however, the ratio fixed asset to subscriber while declining from 20k euros to 4k euros remains high. Fixed assets absorb huge capital and to complete the picture you have to add the assets of Metroweb (around 300 millions euros) the firm controlled by Milan utilities that owns the dark fiber posed in Milan.

Table 3. E.Biscom Financial Data

	2001	2002	2003	2004
Revenues (mn euro)	155.5	321.2	529.1	710.8
Ebit (mn euro)	-233.3	-269.1	-205	-78
Ebitda (mn euro)	-109.8	-35.2	111	220
Fixed Assets (mn eur)	991.6	1428	1457	nd
ROE	-9.3%	-15.2%	-27.8%	-6.9%
Capex (mn euro)	601	683.5	458	397
Employees	1230	1793	1470	nd
Subscribers	48900	176100	330600	417500
Fixed Assets/subscribers	0.02	0.008	0.004	nd
Revenues /Employees	0.126	0.179	0.36	nd

One of the most important indices in cable and telecommunication profitability is the relation between home passed and subscribers because the first relates to the total fixed cost of network deployment and the second indicates the potential annual revenues (See Table 4).

Table 4. E.Biscom Performance Index

	2003 subscribers/home passed	2003 arpu
NTL (uk cable)	0.34	402
Telewest (UK cable)	0.26	752
Comcast (US cable)	0.54	
Cox (US cable)	0.64	
UU cable (total)	0.68	
BSkyB		530
E.biscom	0.10	871
Telecom Italia Adsl		360
Telecom Italia Voice		300

When we compare e.Biscom with other companies operating in similar business, we find a significant lower penetration index but also lower overall costs and a slightly higher Arpu. Us cable operators usually have a penetration rate above 50% that is considered a survival rate in the cable industry. However, European companies often perform worse as the UK cable operators that work with a penetration rate between 25% and 35% so explaining their poor performances.

So far the e.Biscom penetration rate has been quite low but also the costs are low because in the target towns there are mainly apartments and consequently a high population density that reduces excavation costs. Moreover the adoption of the ADSL strategy to penetrate areas outside fiber coverage lowers the capital required to build the network as part of the fixed costs is borne by the incumbent telecom operator (Telecom Italia) and are thus converted into annual variable costs.

Finally, e.Biscom shows a greater Arpu compared both with cable operator and with traditional ADSL operations reflecting the differentiation strategy and the triple play approach, a service bundle able to multiply the revenues and to enjoy scale economies in customer relationship and management.

In the development of e.Biscom some regulatory issues have emerged as specific opportunities that the firm could capture to fasten its growth. In 2000 Telecom Italia acquired from Cecchi Gori Group two television stations, La7 and MTV. To give clearance the antitrust authority imposed to offer at interested competitors for a nominal right of passage the cable infrastructure that Telecom Italia has built in the late eighties within the Socrates Project with the aim to carry cable TV to the main Italian cities. E.Biscom was practically the only operator to catch this opportunity. It could therefore pass its optic fiber in the existing conduct, substantially reducing time and investments

required to expand its area of operation beyond the original Milan focus to the major Italian metropolitan area. In this way the customer base grew faster and e.Biscom could achieve critical mass to exploit scale economies.

In 2001, following the European directive on last mile liberalization, Telecom Italia was forced to unbundle the local loop for ADSL lines. Moreover, in 2003 the Communication Authority imposed a 10% reduction in wholesale prices and in the same ordinance extended number portability to fixed telephony, removing a significant barrier to entry in this market. In this way e.Biscom could extend the geographical coverage to the areas where its fiber optic network does not arrive with a broadband offer via ADSL without significant fixed investment.

When Sky Italia sold the two Italian pay TV operators Stream and Telepiù, in order to accept the monopoly in this market the European Commission imposed some conditions to make easier eventual entries. Among the others, there was the requirement to sell the premium channels to competitors' platforms at a retail minus pricing. The amount of the minus is the object of a controversy in front of the Authority with e.Biscom asking for a 50% discount and Sky offering a lower 30%. With this measure e.Biscom could offer the same premium content of pay TV at the same price improving the attractiveness of the video component of its triple play offer.

Conclusion

The e.Biscom story is a good case study to analyze the features of a rapid growth in TLC business. The process exhibits learning capabilities, fast strategy, and adjustments to the changing market conditions.

Around the central idea to deploy a fiber optic network with IP architecture that allows integrated transport of voice data and video, e.Biscom enlarged the offer with ADSL links and changed the vertical integration degree to a situation where the company operates directly only the network and the services management.

In the evolution process, the organizational structure has changed rapidly taking a more stable shape and adapting operational procedures at the market environment and at the evolving strategic orientation. The conjunction of a stable core orientation and a deep strategic and operational flexibility is an important feature of e.Biscom experience and is one of the most influential key success factors up to the point.

E.biscom enjoyed a first mover advantage in video-telephony and large scale video on demand and, together with a throughout advertising strategy, contributed to form a strong and innovative brand with a good perception among the Italian consumers. The direct control over an IP network generates potential cost advantages both in network management and in service provision where there could be scope economies.

The low penetration rate appears to be the main weakness as it can stress the financial structure requiring more capital per subscriber. E.Biscom responded to this weakness with the strategic shifting to ADSL through the local loop unbundling.

Considering the pace of innovation in telecommunication and IP technology, a compact vertical integrated IP network can generate some technological lock-in especially if any real breakthrough in access technology would appear.

As happened to other telecommunication operators, the shift from a prevailing technological orientation to a more customer orientation focus, is a crucial stage that requires a broad rethinking of all internal processes, key competencies and in general the transformation of the whole corporate culture.

The fiber optic strategy contributed to enhance the competition in Italian broadband market and could play a role in quickening broadband adoption bypassing weakness factors as low personal computer diffusion.

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The Impact of Digital Convergence on Broadcasting Management in Korea: Telecommunications Firms' Entry into Broadcasting Industry

Daeho Kim

Ever since the beginning of the 1990's the telecommunication industry and the broadcasting industry have been bracing themselves for the convergence between the two fields. Towards the end of the 1990's this "convergence between broadcasting and telecommunications" became a reality. The development of the communication and digital technologies enabled the overall digitalization of the broadcasting and brought about broadband telecommunication networks. These developments have led to a huge change in the broadcasting and telecommunication industries. In other words, the emergence of various new technologies brought down the barrier between telecommunication and broadcasting.

In Korea, digital broadcasting started in 2001 beginning with terrestrial broadcasting and it gradually proceeded to include satellite TV and then cable TV. Korea is one of the first countries to start digital broadcasting and our prowess in telecommunications network is even more impressive. As of August 2004, 76% of all Korean households are subscribed to the broadband Internet and such penetration rate is indeed the highest in the world. The Korean Internet users utilize this advanced Internet infrastructure to gain access to the sea of contents over the web and they have well earned reputation of being the most Internet savvy people in the world (Ministry of Information and Communication, 2004a). Broadcasting network such as cable TV network offers broadband Internet access. Meanwhile, telecommunication network such as ADSL provide broadcasting services. People use the video on demand (VOD) service over the high speed Internet.

Convergence between telecommunications and broadcasting is a phenomenon where what used to be two separate areas—broadcasting and telecommunications—becomes one through the development of supporting technologies and the sophistication of demand. Such convergence eliminates the distinction between network and service thereby initiating an overall convergence in the industrial structure as well as in the institutions. (Korea Information Strategy Development Institute, 1997). What's more, convergence reduces the difference which had so far separated broadcasting from telecommunication and has inevitably introduced great changes all around us.

Currently, convergence between broadcasting and telecommunication can be witnessed everywhere. There are two factors that had been conducive to this phenomenon. One is the 'hardware factor' such as the wide penetration of broadband Internet and the development of the broadband network. The other is the 'software factor' that includes the digitalization of the contents through the emergence of High-Definition TV, cable TV and satellite broadcasting. However, the most conspicuous result of the convergence between broadcasting and telecommunication has been the transformation of the whole media industry. The convergence trend not only rewrites the industrial system but also further more transforms the market structure and fuels competition. As this trend of convergence continues, the broadcasting companies and the telecommunication service providers alike are displaying signs of change which was only to be expected. The two industries, the broadcasting industry and the telecommunication industry are now vying for the same objective, to take a large share of the lucrative multimedia business, and therefore, the barrier between the two has disappeared leaving them in a direct competition with one another.

Particularly in the case of the telecom service providers, they have expanded their businesses from voice telecommunication and are now providing various image data services including broadcasting. This affects the business of the broadcasting companies and shifts the overall structure of the broadcasting industry. Nonetheless, the telecommunication service providers are aggressively pursuing to take part in the broadcasting business.

Of course, it is unlikely that the broadcasting companies would welcome such a challenge. The terrestrial broadcasting companies in Korea are highly influential. The three terrestrial broadcasting companies, KBS, MBC and SBS account for 70% of the total Korean broadcasting market (Korean Broadcasting Commission, 2004). These three companies are strongly opposed to allowing the telecommunication service providers to take share of the broadcasting business. This is because they fear they will lose their market dominance. However despite their concerns, the telecommunication service providers continue to gain a foothold in the broadcasting market starting with satellite broadcasting.

This study aims to address the effects and implications of this convergence trend. The study will focus on analyzing the impact of telecommunication service providers' entry into the broadcasting industry.

Change of Industry Structure

Since the beginning of the 1990's, convergence of broadcasting and telecommunications has been anticipated and highly discussed (OECD, 1999). Graham Murdock (2000) has explained the concept of convergence by distinguishing the following three types of convergence. The convergence of the media is a phenomenon that took place even before we became familiar with

the concept of 'Multimedia' in the beginning of 1990's. This first type of convergence is characterized by the fusion of the main forms or ingredients of the media (music, text, image, graphic etc.) into one. CD-ROM and Internet websites are some of the examples of media convergence.

The second type is the convergence of telecommunication and media technology. During the 1980's and 1990's there was an expansion of such technologies. From the beginning of 1980's to the first half of 1990's there was a great surge of new media and telecommunication technologies. People gained command over numerous channels of access such as VCR, cable TV, and satellite broadcasting. Since then, the emergence of personal computer (PC) has paved the way for even more new technologies as computer games and CD-ROMs gained popularity. With the digitalization of information and communication technologies, the PC became linked to networks and ultimately to digital TV. Digitalization provided the necessary foundation for the integration of information and entertainment.

The third convergence type is business ownership. This means the removal of the barriers that used to separate media companies, telecommunication service providers and computer makers. With the introduction of digital TV and with the expansion of the Internet, new players such as telecommunication service providers were able to enter the broadcasting business. The opportunity was given not only to the service providers but also to the household appliance makers and PC manufacturers. The convergence between the businesses took many shapes and forms including strategic alliances, mergers and acquisitions and equity partnerships.

Both Murdock and Peter Golding pointed out that convergence should be regarded as an economic phenomenon that takes place due to changing business strategies and structure (Murdock, 2000; Golding, 2000). In other words, the convergence between broadcasting and telecommunication has taken place because of business needs. And the current convergence trend is actually broadcasting companies and telecommunication service providers crossing over each other's boundaries.

Korea is also witnessing an active integration among telecommunications and broadcasting companies. And this integration brings down the wall between different areas of business. Cable TV operators step over their boundary by providing Internet access via cable. Likewise, the telecom service providers trespass on the broadcasting industry by providing audiovisual streaming service. Finally, some businesses diversify and conduct M&A.

Just to name a few examples, Korea Telecom (KT) is the majority shareholder of SkyLife, the only digital satellite broadcasting company. And SK Telecom recently launched their satellite DMB business[41]. Such business

[41] DMB is a Digital Multimedia Broadcasting which is developed from the DAB (Digital Audio Broadcasting). The latter is to provide audio service only, while the former provides video service as well.

diversification, alliance and acquisition strategies among telecom and broadcasting companies are all means of survival in the new media era.

More and more telecom operators are launching a broadcasting business because of the change in the industrial structure due to convergence trend. In 1997 the European Commission (EC) predicted that the media industry would undergo a significant structural change. According to the EC, the media industry would move away from its current vertical structure toward a more horizontal structure in the value chain. In short, up to now, industries have been divided into telecommunication industry, broadcasting industry, newspaper industry, film industry and so on according to the form of information format, but from now on the industries will be defined as information network industry, information service industry, contents industry etc., according to the kind of value they create.

With this in mind, the European Union (EU) has come up with a new categorization of the information industry. In March 2002, the EU divided the information industry into two categories: electronic communication network and electronic communication service (European Union, 2002). Accordingly, they adopted the proposed recommendation to apply a single regulatory system for both electronic communication network business and electronic communication service business. This recommendation aims at striking a balance between network and media, applying separate regulations for transmission and contents and most of all to uphold public interest. By achieving these objectives they plan to simplify and integrate the network related laws and regulation. The purpose of this plan is to change the structure of the regulation system from vertical to horizontal. Under the existing vertical regulation system, regulations differ depending on the type of business i.e., broadcasting or telecommunication. With the horizontal regulatory framework, different regulations will apply for different layers of the business i.e., network, service, contents etc. (OECD, 2004).

Telecom Service Providers' Entry into the Broadcasting Industry

The 2000 Broadcasting Act is an integrated law that brought together all the broadcasting related laws into one. Under this new law, the responsibility of regulating the broadcasting industry was handed over from the Ministry of Culture and Tourism to an independent administrative and consultative body called the Korean Broadcasting Commission that possesses the authority to enforce the regulations. Also for the first time there was an inclusion of an article on satellite broadcasting. This article made it possible to launch SkyLife, the Korean satellite broadcasting company. At the same time, the telecommunications operator KT could enter the broadcasting industry and became the majority shareholder of SkyLife. Since then, more telecommunication providers began to take part in the broadcasting business. In the following sections we will describe some examples.

KT

KT is Korea's largest network operator. After acquiring a majority stake in Skylife, which has 1.27 million subscribers and generates revenue of 17 million US dollars (March 2004), KT is planning to become a major player in the broadcasting industry through the launch of IP-TV. IP-TV is a network based broadcasting service. KT will provide multicasting service to the households by utilizing their ADSL subscriber network[42]. Their service will include real-time broadcasting and VOD service. This service will become commercially available in 2005 (KT, 2004).

KT also considers home network service to be their core service. Home network can be established by linking all the information devices in a household. Home network can become a reality with the help of computers, but the digitalization of broadcasting and telecommunication is what made it ultimately possible. When the home network develops, contents can flow in both directions and more video images can be made available. Particularly with the wide penetration of DVD and digital broadcasting, quality of sound and video has enhanced greatly. As such, Home network service seems to be a highly desirable business opportunity for KT because it will allow them to obtain a smooth access to the broadcasting and video industry. KT has branded its home network service as HomeN. HomeN is a broadband based home networking service. KT has used its ADSL high-speed internet access, Megapass, and connected it to the home gateway to allow home automation that controls broadband Internet, HDTV and other home appliances. On top of that, this home networking service supports a wide range of telecommunication and broadcasting service including interactive TV. Also, KT provides several other services such as TV-VOD service that allows the viewers to do their own programming, home viewer service that enables the subscriber to check his/her home from outside and an SMS service between TV and mobile phone.

SK Telecom

SK Telecom is the largest mobile operator in Korea. It accounts for more than 53% of the total mobile telecommunication market (Ministry of Information and Communication, 2004b).

SK Telecom is not only providing voice data service but recently it has launched a 3G technology based multimedia service called June. This multimedia mobile service provides movie, music, animation game and other entertainment contents as well as TV programs. June is especially significant because it offers the users the choice of eight TV channels including four terrestrial TV channels and four other major cable channels. And the viewers can watch these programs real-time over their mobile handsets. The service

[42] KT has 6 million subscribers of ADSL, which shows 40% of total high speed internet.

started in November 2002 and as of March 2004, the number of subscribers to this service exceeded 2 million. This is because the Korean mobile users find this video streaming service extremely convenient and enjoyable.

Furthermore, SK Telecom is preparing to launch a full mobile DMB service. This satellite DMB service will provide 11 to 13 TV channels and 25 audio channels. The mobile broadcasting service will be available to the users for a set fee (SK Telecom, 2004).

Satellite DMB is categorized as a broadcasting service under the new law of 2004 and SK Telecom is in the process of obtaining a license for the provision of this service. The application for the license will be submitted in November 2004 and license will be granted in December. Therefore service will become available in 2005. Once the service begins SK Telecom will have launched its first broadcasting business (Kim, D., & Kim. Y., 2004).

Hanaro Telecom

Hanaro Telecom is the second largest local telephone company and also the second largest broadband Internet service provider. Hanaro serves 8% of all households subscribing to the local telecom service and 25% of all broadband connected households (Ministry of Information and Communication, 2004b). Hanaro Telecom has a vision to become a multimedia service provider that provides broadcasting and telecommunication service together. To this end, Hanaro Telecom plans to use its broadband network and subscriber base to provide VOIP and IP based broadcasting service. From June 2004, Hanaro Telecom has started their broadcasting bundled service in cooperation with satellite and cable TV operators. Up to 2006, they will continue to provide a bundled service of broadband Internet and VOD and afterwards, from 2006, they will add IP based broadcasting service (Hanaro Telecom, 2004).

Dacom

Dacom is the second largest international telecom operator. It was established in 1991 as the first company to challenge the monopoly of KT and it became KT's major competitor. Dacom also owns Powercom, an information network company. Through Powercom, Dacom operates a cable TV network as well as a broadband Internet network. Using these networks, Dacom plans to provide an HFC based broadcasting and telecommunication service (Ministry of Information and Communication, 2004b).

Dacom is also focusing on Digital cable service. Powercom will offer HFC network and Dacom will provide the service under its own brand name.

Dacom aims to provide PC-Vision service. PC-Vision service is an interactive service made possible by installing a DCR (Digital Contents Receiver) on the subscribers PC to allow free flow of contents. Dacom hopes to transform itself as a convergence service provider through TPS (Triple Play

Service) which will include VoIP, Digital TV, and broadband Internet service (Dacom, 2004).

Broadcasting Companies' Entry into the Telecommunications Iindustry

The broadcasting companies show a great interest in the telecommunication business. The cable TV operators are the most aggressive in their pursuit. Most of the cable operators in Korea are already providing value added telecommunication services, such as high-speed Internet access, using their own network or other telecommunication companies' networks. As of July 2004, 800,000 subscribers gain broadband Internet access via cable and this number represents 6.7% of the total of 11.7 million broadband subscribers. Recently the cable operator's market share in this business is surely increasing (Ministry of Information and Communication, 2004a). Until now the government did not apply stringent regulations on the telecommunication services provided by the cable TV companies and because of this lack of regulation, most cable companies have been selling their cable TV service bundled together with their broadband Internet service. In some cases they even add a voice data service using VoIP and their service ultimately becomes a 'Triple Play Service'.

The essential prerequisite for providing such convergence service is the digitalization of cable. As such, many cable TV companies are in the process of building a digital cable center in preparation for the convergence. In fact, more recently, Kuryx, C&M, and BSI have either started or made plans for it (Lee, et al., 2004).

At the same time, cable TV operators are already in the home networking business. Cable TV operators find this business attractive because cable TV Set-top-Box can also serve as a home network server. What's more, the cable TV operators believe their HFC network is more suitable for home networking service then the xDSL network used by the telecom operators.

As for the terrestrial broadcasting companies and satellite broadcasting companies, they are more interested in interactive data broadcasting. The terrestrial broadcasting companies have completed testing this service and the satellite broadcasting companies have began DVB-MHP based data broadcasting. SkyLife has already joined hands with a telecom service provider for the provision of broadcasting and telecommunication integrated service.

All in all, the cable companies' goal is to provide all around multimedia service by converging broadcasting and telecommunication. They are aggressively seeking to achieve this goal by starting their convergent services. On the other hand, the terrestrial and satellite broadcasting companies prefer to stay with their original broadcasting service rather then enter directly into the telecommunication service market. However, they do plan to provide limited interactive service and other convergent services as a part of their additional services.

Implications of Telecom Operators' Entry into the Broadcasting Industry

Methods of Entry

Korea's telecommunication operators are highly motivated when it comes to launching broadcasting and convergent services. They are threatened by many factors such as telecom market saturation, integration between fixed line and wireless and increasing competition. Because of this adversely changing market environment, the operators are concerned about securing future revenue source and that is why they are diversifying into multimedia service business which they expect will become highly profitable as the convergent trend accelerates. However, telecom service providers are entering the information service industry using their existing networks. So they start with vertical integration. As such, they are more focused on information service business and less on information contents business. This indicates that the service providers, based on their long-term prediction that the broadcasting companies will have a competitive advantage in the era of convergence, has decided to secure service provision capabilities so that they will have more leverage in future negotiations with the broadcasting companies. Most telecom companies gain a foothold in the convergent service area by launching broadcasting services. KT launched the nation's first satellite broadcasting company, SK Telecom started a satellite DMB business, Hanaro Telecom is about to launch IP-TV service and Dacom has a digital cable TV business underway.

The fact remains that the broadcasting companies and the telecommunication service operators alike are crossing one another's boundary and such convergence leads to a significant change in the existing industrial structure. Neither the broadcasting companies nor the telecom operators can stay safe within their own boundaries. There will emerge a new industrial structure where these two industries have to engage in direct a competition to secure a share of the home entertainment network.

Skylife

SkyLife is the first satellite TV service which is a consortium of KT and the terrestrial broadcasting companies. The consortium was formed in March 2000 and license was granted in December. It started its broadcasting service in March 2002 and currently has 1.5 million subscribers.

KT is the majority shareholder of Skylife and it also has the management right. SkyLife's shareholder distribution is as follows. KT: 27.43%, KTF: 2.38%, KBS: 10.7%, MBC 6.42%, SBS 1.07% etc. KT and its affiliates hold over 29.81% of SkyLife's shares and next to KT, the three terrestrial broadcasting companies have 18% of the shares. In short, SkyLife is run by an alliance of KT and the terrestrial broadcasting companies. The influential terrestrial broadcasting companies seem to have been included to facilitate KT's

entry into the broadcasting business. As such, the management is also shared by KT and terrestrial broadcasters. The president of SkyLife is from KBS, and the vice-president from KT. The management team for broadcasting department is also an equal mix of KT and KBS. Surprisingly, there has been no report of management disputes as of yet. Besides the management, the junior employees were also recruited from various areas of broadcasting and telecommunications.

TU Media

TU media is a subsidiary of SK Telecom established in December 2003 to handle the satellite DMB service. SK Telecom has 30% of its shares and MBCo(Toshiba) of Japan has about 10%.

Interestingly, TU media's management group is also an amalgam of broadcasting experts and telecommunication experts. The president comes from SK Telecom and the vice–president from KBS. Inclusion of some terrestrial broadcasting companies is a strategic move that will help the company to become accepted in the broadcasting industry. However, unlike SkyLife, most employees of TU media are from SK Telecom.

Impact on Broadcasting Management

As seen, telecom operators' entry into the broadcasting industry brings inevitable and significant changes to the whole industry. Such entry is contrived through vertical integration. The main rational behind this vertical integration is maximization of financial gains. Due to the inherent nature of network, economy of scale is imperative, the larger the scale the more efficient and profitable a business will be and thus, vertical integrations have been the best option so far.

It is said that efficient management is the main benefit of a vertical integration. By diversifying the use of network, companies can generate more revenue and seek new growth opportunities. The other benefit is stronger presence in the market. The vertical integration enables the companies to achieve economy of scale and create synergy effect which leads to larger market share

Because of the competition presented by the telecom service providers the broadcasting companies are beginning to feel the importance of maintaining a certain level of profitability. However, the broadcasters still tend to be more focused on preserving the public interest than enhancing profitability.

With regard to the broadcasting industry's entry regulations, the level of foreign ownership has increased in the broadcasting business. According to the 2004 Broadcasting Act, the ceiling for foreign ownership was lifted to 49%. The regulation on foreign ownership in the broadcasting business became less stringent as the telecom operators began to enter the broadcasting industry.

However, we have yet to witness any positive results of telecom operator's participation in the broadcasting industry because so far none of them has been

able to display substantial gains in profit or market share. SkyLife, led by KT has been in the business for the last 2 years and they are still suffering a loss. SK Telecom has so far invested a total of 270 million US dollars in its satellite DMB business without seeing much return

Dispute between Broadcasters and Telecom Operators

The broadcasting companies are strongly against allowing the telecommunication service providers to take part in their business. Amidst the convergence, it turned out that while the telecom operators are actively taking the initiative in the broadcasting business, the broadcasting companies were somewhat passive in their approach to the telecommunication industry. As such, the broadcasting companies are resentful and concerned.

First, since the telecommunication industry is already much larger in size, the broadcasting companies are concerned that their industry will shrink even further. The telecommunication service providers have an advantage over the broadcasting companies in terms of technological capability (Network), finance (Telecommunication industry is estimated at 400 billion US dollars while the broadcasting industry generates only around 55 billion US dollars), and marketing.

Second, broadcasting services in future will mostly be convergent service that incorporates telecommunication element as well as broadcasting element. Digital revolution will produce more fusion and integration among various media or services. Internet newspaper and satellite DMB are all forms of hybrid media where more than two forms of media come together to create a new service. This kind of hybrid media are not pre-planned and developed by a regulatory body, they are developed as a result of an understanding between the businesses and consumers. However, when it comes to hybrid media the broadcasting companies are faced with limitations in their development capability due to their lack of technology. But the telecommunication service providers, who already have the broadband network and money to invest, find it much easier to develop new services.

Third, it's relatively more difficult for the broadcasting companies to enter the telecommunication industry than vice versa. Telecommunication service providers are launching broadcasting services such as satellite and satellite DMB. On the other hand, the broadcasting companies cannot as easily enter the telecommunication business whether it is fixed line or mobile. Therefore, apparently in a convergence situation, the telecommunication service providers seems to have more advantage and this perception is what makes the broadcasters take a negative stance.

Conclusion

After 2000, in Korea, convergence between broadcasting and telecommunication has accelerated. Convergent services have been introduced and telecommunication service providers and broadcasting companies alike are responding more seriously to this trend. Bundling services that incorporate TV, broadband Internet and telephone have emerged through the integration of networks. And the functions of cable TV and telecommunication network have grown more similar so as to put them in direct competition with one another. For instance, the digitalization of cable TV enabled the operators to provide broadband and interactive services. Meanwhile, the telecommunication service providers have continued to increase their bandwidth and thus are now able to add video streaming to their list of services. Inevitably the two areas begin to overlap and this leads to competition which will motivate them to develop further.

The telecommunication service providers have been more active with their broadcasting business however this effort is yet to bear fruit. They are continuing to make huge investments but the positive effects of this vertical integration have not been obvious as of yet.

Particularly, the opposition from the existing broadcasting companies remains a problem. When SkyLife wanted to retransmit the terrestrial broadcasting channels, the regional broadcasting companies fiercely objected and this plan was put on hold for two years.

As can be seen, the convergence of broadcasting and telecommunication is not a smooth process. Mainly because the two areas are competing one another over who will take the initiative in the convergent service market. Therefore, even though there are some telecommunications operators already operating broadcasting businesses, the convergence trend is not likely to quicken its pace because of strong opposition from the broadcasting industry. Nevertheless, despite everything, we can expect to see significant changes in the Korean broadcasting management in the near future.

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The Maturing New Economy: New Opportunities, Structures, and Challenges

Will Peer-to-Peer Technologies Create New Business?

Franz Lehner

Peer-to-peer (P2P) can be seen as a new technology or a new paradigm within electronic communication and are driven by research, development, and market activities of companies and government (See Figure 1). There are some clear indicators for the business relevance of P2P technologies. Nevertheless, the economic aspects of peer-to-peer systems have received little attention so far. Due to the success and popularity of applications such as Napster, KaZaa and others, a lot of ideas were created about how to use P2P networks within an organization as well as a general instrument for electronic business. Both areas can lead to new market opportunities and also to the creation of new firms. On the one hand the opportunities of P2P technologies can serve as basis for new business models; on the other hand they can lead to substitution of existing applications or just be used for improving current work processes.

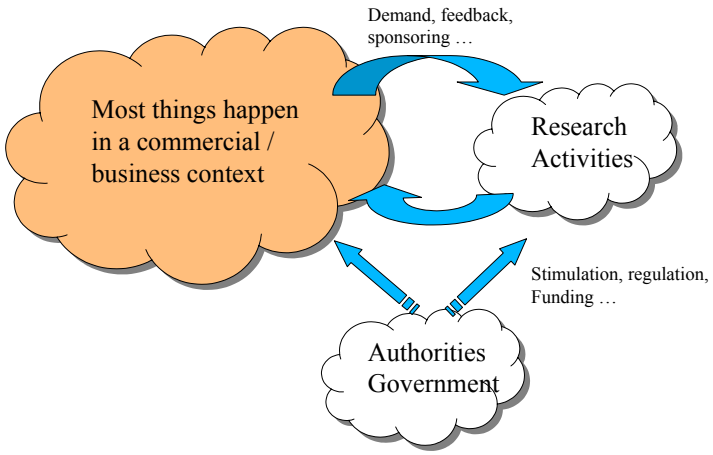

Figure 1. Driving Forces of Business Opportunities through New Technologies

In order to understand what is generally happening when new technologies are emerging, it makes sense to briefly look at an example which is taken from the world of mobile business. In the world of mobile applications, services, networks etc. meanwhile most things happen in a commercial or business

context. We may not forget that this was quite different in the early days of mobile solutions. But exactly this is a good reason why business aspects should be taken into consideration from the very beginning when planning new applications or at least looking for market opportunities in combination with new technologies. Transferring the experience from the world of mobile (which is close to P2P also in a technological sense) we should try to consider economic aspects of P2P from the very beginning.

A structured and systematic discussion of unsolved problems therefore should consider technological and business aspects in a balanced manner. A first step would be the development of a common view identifying the key areas to be considered for discussion. In a first approach four levels of discussion can be distinguished, namely:

1. market level (including legal and regulative issues)
2. enterprise level (business models etc)
3. user level (single/group, private/workplace etc.)
4. technical level and global infrastructure(s), including legal environment(s), cultural and other aspects)

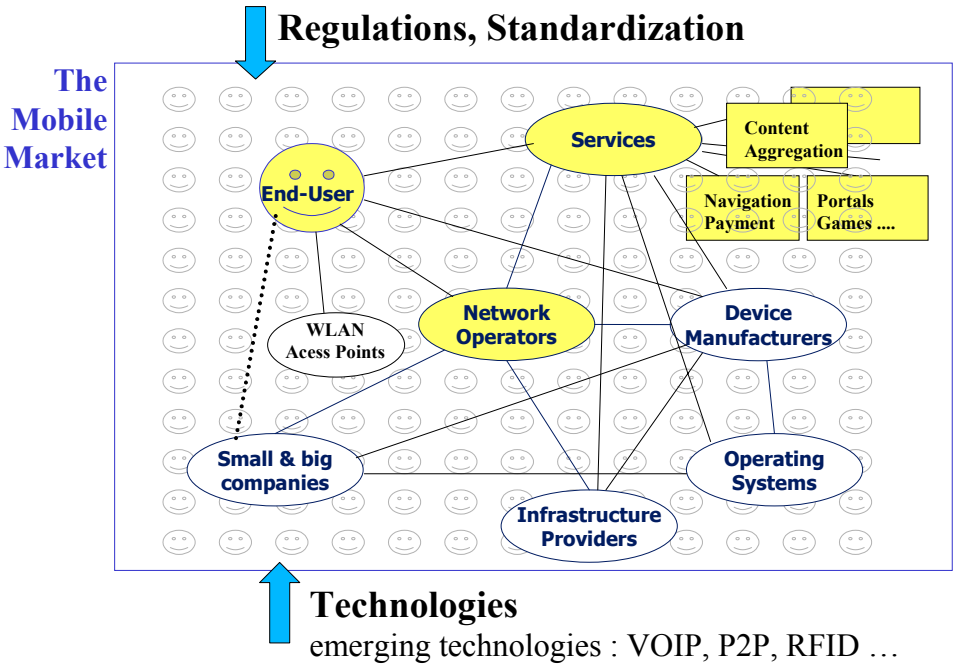

Figure 2. Market Forces in the Mobile Market

Based on this framework a business oriented view of applications and technology use can be developed. It is also possible to go into the details of the

market (which is close to and overlapping with the IT market) and identify the key players, dependencies between players and market participants, influences, driving forces etc. and discuss possible scenarios. Figure 2 demonstrates this for the mobile market. In the market for mobile technologies and services the network operators and the service provider are playing a dominant role at the moment (and there are no changes in sight for the next years). The end user has (at least indirectly) some influence on the market development but she/he is not really the driving force. The acceptance of new products and services within a market environment is dependent from many factors (among them price, social value, trust, security etc.). The approach presented above and the model shown in Figure 2 can easily be adopted to analyze the activities and market opportunities in a related field.

Survey and Classification of P2P Applications

There are several reasons why (mobile) P2P is worth being investigated. At this point we will not discuss the different definitions of P2P. We base on the following two interpretations: a) Sharing of computer resources and services by direct exchange between systems; b) P2P is a class of applications that takes advantage of resources—storage, cycles, content, human presence—available at the edges of the Internet. We will also not discuss the characteristics of P2P networks in detail; we assume them to be the following: network of equal nodes, shared infrastructure, no central authority, added values through shared resources leading to network effects. Beside ubiquitous access to existing services new opportunities like ad-hoc networking or vehicle networks are seen. The difficulties in exploring the field rely on the fact that several layers of abstraction (technical, logical or conceptual, social, business) can be distinguished and they are all contributing to the offered features. Figure 3 depicts the complex environment and infrastructure in which P2P applications are embedded.

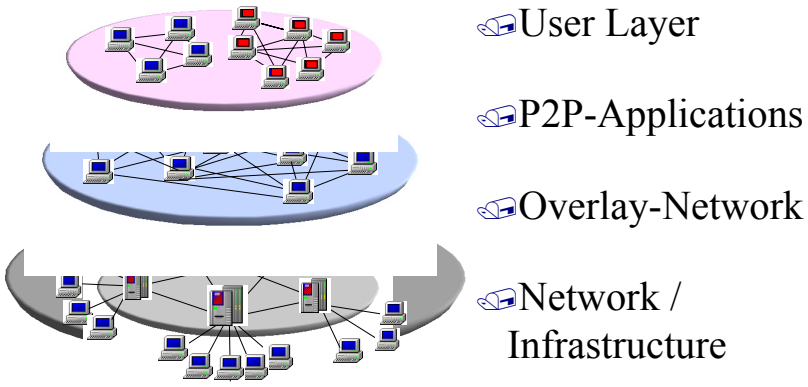

Figure 3. Complex Environment of P2P Applications

Meanwhile there are many applications in the market which are based on peer-to-peer networks. Nevertheless several applications have been referred during the last years as "peer-to-peer" which, according to the definitions above, are no peer-to-peer applications. For example, the large amount of tools for distributed computing does not count to the domain of peer-to-peer applications according to the common understanding. The reason is that no direct communication is intended between the peers there. The exchange of data or files only takes place between a central instance and the individual peers. So the term P2P represents sometimes rather a marketing tool than a new technology. In addition to that the term became a "buzz" concept around 2000 and was applied to nearly anything that had to do with connecting or sharing. A result of the popularity and the wide perception was little knowledge about the underlying technical concepts.

Some of the existing applications, which are actually based on the peer-to-peer technology, will now be presented. An exhaustive survey of the applications is nearly impossible due to the market dynamics.

The group of the different **Instant Messenger Tools** forms a majority of the existing peer-to-peer applications. To be precise, this group includes e.g., the AOL Instant Messenger and ICQ, which both support a real-time and direct communication between two participants in the network (peers) by the use of direct message exchanging. The simultaneous message exchange between several persons is also possible via the use of a chat function.

Further Instant Messenger Tools, which support the communication between persons by the use of a peer-to-peer network, are e.g., the MSN Messenger from Microsoft, the Yahoo! Messenger, Zim-Pro and also the VyPress Messenger from VyPress. The last two offer the possibility to form private sub-networks and thus limit the communication to a closed, authorized user group.

Another class of applications supports the user in **purchasing and selling** of goods. An example is PinPost7. With PinPost7, it is possible to create own sale offers and search for goods which one intends to buy. It is also possible to limit the search for specific objects on sale to the close vicinity of the person interested in buying the object. An application which intends to realize an electronic market place on the basis of peer-to-peer nets is still in prototype status (Benger & Schulz 2003). This procurement-network is intended to support the participants in the network especially during the transaction phase. However, a solution which is ready for the market has not yet been implemented.

An **IP-telephony application** based on peer-to-peer technology is Skype. With the use of Skype it is possible for everyone to talk via internet with any other person being online and having installed the same application.

The application Groove is an example for a **groupware solution** based on peer-to-peer technology. The participating peers can use communication features and also form work groups, which collectively share a field of activity.

Besides synchronous communication Groove offers in these working groups also the possibility of asynchronous communication as well as the possibility of exchanging data, contact management features, a scratch-board and a group calendar. Also, a collective browsing in the internet is possible with this application. Similar functions can be found in the applications Hive, Colloquia iKnow or Onobee, which all belong to the class of peer-to-peer groupware.

The **exchange or swapping of files**—widely called "file sharing"—can be seen as the area of application which led to the boom of peer-to-peer applications and started the broad discussion a few years ago. These applications combine stable and mature search algorithms with the possibility of locating distributed files on different nodes in the net and download it partially. Objects exchanged or downloaded from the internet by the use of these applications are music files and more and more movies.

We can distinguish between open networks, whose protocol architecture is publicly available, interoperable networks, which exchange data with other networks and whose protocols can be licensed, and proprietary networks, whose underlying protocols and available clients were designed proprietarily and are not public available. Proprietary nets are, e.g., the Edonkey2000-Net and its successor Overnet, which offer for the use of their services clients like eMule or eDonkey. Another proprietary net is the OpenFT-Net with its clients giFTcure, giFT-fe and KCeasy. An example for an interoperable network is the Fasttrack-Net with its client-applications KaZaa, KaZaa Lite K++ and Grokster. A completely open network would by the Gnutella-Net with the clients Morpheus, BearShare or LimeWire.

A very special kind of application concerns **open discussion forums** because they support the original idea of the internet. Seen from the distance Freenet is just another network for sharing data. However, the exchange of music- and movie-files is not the intention here. Freenet was designed as a totally decentralized system for the exchange of statements and opinions. This application makes it possible for everyone to publish texts without personally being identified. Another application in this field is the project Freehaven, which follows the same philosophy as Freenet but goes a step further concerning anonymity because also the reader of an article is anonymous.

A similar application with a different objective is Science-to-Science (S2S). S2S is the first search engine in Europe designed for the search and exchange of scientific information. By the clearance of certain files scientist can offer their documents to an interested community.

After this short overview of existing P2P applications a more systematic attempt is made to classify existing application. For that purpose in a first step typical activities supported by P2P applications are identified and briefly discussed. Of course, the classification and description is not exhaustive but gives an insight in business opportunities of this emerging field.

Communication and Collaboration

Communication is primarily supported by instant messaging tools like the AOL Instant Messenger. The original and primary target group of these open peer-to-peer networks was private persons. However, these tools seem to be useful for companies as well. Companies and particular work groups in companies respectively can be considered as the main target group of the applications Zim-Pro and VyPress Messenger. As it is possible to limit the use of the tool to a certain group of persons, it becomes possible for companies to selectively exclude or include persons and eliminate the risk that due to the use of an open network information could fall in the wrong hands or problems with spam-messages come up.

Collaboration, which also includes the support of cooperation between persons, is supported by groupware and collaboration-tools like Groove. In the domain of collaboration the largest number of peer-to-peer applications can be found. Most of these tools primarily focus on business or company related use. This happens because the implementation causes costs or requires license fees, and utilization by private persons is unlikely because many instant messenger tools offer at least a subset of the functions found in groupware solutions and are usually free of charge.

Sharing

The activity of sharing, according to the definition, is supported by numerous file-sharing tools like KaZaa or eMule. The target group of these applications is private persons. The commercial use is discussed. Mainly music- and multimedia-files are being exchanged so far. It is of no relevance from whom these files originate. A special application that can be counted to this category of applications is PinPost. The users of this tool do not offer multimedia contents but tangible objects like used computer hardware. In return they receive money. For the buyer and the seller it is of no relevance who the opposite party of a transaction is. However, it is crucial that the purchased article matches the given specifications and that the price which was agreed upon is paid. PinPost is designed predominantly for the private use.

Publishing

The application Freenet can be mentioned as the main application in the domain of publishing. Although the real identity of the publisher is not revealed, every document is clearly assigned to an author, even though anonymous, by the use of a special algorithm (Möller, 2001). The reader can thus recognize the author of a certain article and can draw conclusions concerning the credibility of the publication. Freenet is used primarily for private purposes.

For scientific material Science-to-Science is used. A main difference to the philosophy of Freenet is that, in a scientific context, it is of high relevance for

the recipient to know, who the author or publisher of an article is. This means that the business context can be seen as a possible future target group for this application.

The original idea of this kind of applications was that the sender has to be relevant for the recipient. Both Freenet and S2S are applications that match this characteristic. In contrast to this Freehaven goes a step further with its anonymisation of the author. Here, the originator of an article is no longer apparent.

Storing

Storing in a very conventional sense is obviously the basis of every peer-to-peer application as the decentralized use of storage is a fundamental concept of all peer-to-peer networks. With this special applications the question where the data is stored physically is of no relevance for the sender and he cannot influence this respectively. Distributed and shared network resources are used in order to store files and efficiently use existing resources. The technologies aligned are discussed and investigated under the term grid computing (which includes some additional facilities beyond storage).

Further activities supported by P2P networks, which are not discussed in detail here, are selling and reselling goods (e.g., Lightshare, PinPost), gaming (e.g., DOOM, DaliWorld, Star Craft), and distributed computing (e. g. Seti@home, Folding@home).

In Table 1 an attempt is made to summarize the results. It can be observed that most of the tools support communication and collaboration activities. This may be caused by several reasons. Obviously the main reason is the structural similarity of a peer-to-peer network with the real communication situation. If one thinks of the cooperation between persons, this is characterized most notably by the direct exchange between all parties involved. Sharing is supported by a tool in the private as well as in a business environment, although the electronic market place is still under development. A similar situation exists in the area of publishing based upon peer-to-peer nets. In the domain of storing no applications are known so far, which are available; the field is developed in combination with research attempts on grid computing (which also includes sharing of processing capacities). Generally speaking, it can be observed that at the moment there are only very few applications, which were designed for the use in an enterprise or for business purposes. Communication and collaboration seem to be the most promising field for the near future.

Table 1. Classification Schema for Peer-to-Peer Applications

	Communication and collaboration	**Sharing**	**Publishing**	**Storing**
Private	misc. Instant Messenger Skype	misc. File-Sharing Tools PinPost	Free Network Freehaven	
Business-related	div. Instant Messenger Skype VyPress Zim-Pro Groove Hive Colloquia Onobee	Electronic market place	Science-to-Science	Grid-computing

Advantages and Disadvantages of the P2P technology

Due to the early stage of development it is not easy to fully understand the benefits of the emerging P2P technology. Sometimes P2P technology is contrasted with the client server technology because at the first glance all functions of an application can be realized with this widely adopted technology as well (most web applications are based on a client server architecture). In other words, for a non expert user, it often can not be seen whether an application is P2P based or not. Anyway, to reduce a comparison to architectural characteristics would not really allow deeper insights into the real potentials of P2P solutions. Therefore an attempt is made to assess the advantages and disadvantages in the following chapters in order to get a better understanding of what might motivate people and also companies to use that new kind of applications.

Advantages of the P2P technology

Cost reduction There is no need for a central server in a P2P network which as a consequence reduces the costs for operating and maintaining this equipment. This means that not only the costs for hardware are touched but also the costs for administration and management of these servers can be saved (Moore & Hebeler, 2002). These advantages can only be achieved if a decentralized or at least a hybrid architecture approach is used for the implementation. Of course, some administrative overhead is still remaining, e.g., for maintaining and exchanging meta-information.

Scalability A peer-to-peer net in its pure form is principally unlimited. This means that any number of nodes or users can be incorporated because no bottlenecks like a central server in the client-server-architecture servers exist. As

every node can use services from any other participant but also allocates new services, a maximum efficiency is hard to achieve. This of course only applies to the case of a fully decentralized net architecture. Although more nodes can be served by a meta-server in the hybrid-approach than in a Client-/Server-architecture, the net cannot become infinitely large as the meta-server can only support a certain number of requests.

Content selection and rating Files usually are rated by many net participants whether they are worth seeing, hearing etc, and the result influences the distribution in the net. The download rate of a file that is high rated is usually high. In the case that the application supports the simultaneous download from several sources, the process of distribution can be accelerated as the content is available several times in the net. If a file is only interesting to a small number of net participants, it can happen that the content disappears completely from the net. This can be seen as a natural selection or filtering process.

Distributed responsibilities By the use of an application based on peer-to-peer technology the responsibilities are shifted to the individual participants. The individual is no longer controlled in his actions by a central entity, but is responsible for his own actions. He no longer has to wait for the execution of his inquiry in a central queue.

Anonymity Depending on the implementation an individual net participant can under certain circumstances act completely anonymous. It cannot be uncovered who e.g., published or just read an article including content that is suspicious or illegal. This anonymity cannot be realized in a centralized system. There the centralized instance, the server in most cases, has to know about the enquirer for sending the result to the correct recipient. In a peer-to-peer net this can be achieved much easier. The interaction between the peers is guaranteed by a number of applications and techniques which differ however in their degree of supporting anonymity for the participants.

Avoidance of a single point of failure Through the lack of a central server a potential source of errors and a potential target for attacks on the net respectively is eliminated. Thus attacks can no longer cause a breakdown of a whole application. In the worst case—if the net is based on a hybrid architecture—only a part of the net can be disturbed. If a fully decentralized architecture is used, only individual participants will be disconnected which does not endanger the continuity of the net itself. In the hybrid approach, this advantage can obviously not be realized. When a central access point is disconnected, an individual net participant cannot locate the required files in affected sub-networks even if the point only contains meta-information about the available files.

Support of ad-hoc co-operation Usually in a P2P network no central instance will be available. This means that mechanisms have to be implemented that are capable of coping with the dynamic loss and addition of nodes. The mechanisms for self-administration and dynamic re-configuration can be used for the spontaneous co-operation. In the same situation in a client/server-application a manual intervention by the administrator would be required, who has to allocate rights according to the security policy. A peer-to-peer network therefore is the ideal solution for spontaneous co-operation or communication needs.

Disadvantages of the Technology

Besides the already mentioned advantages which result from immanent characteristics of the peer-to-peer architecture, there are also possible disadvantages which have to be obtained as well.

No guaranteed resource supply or availability Through the characteristic of a peer-to-peer network is quite normal and not an exception that particular resources are temporarily unavailable in the net. Though the possibility of redundant storing on different peer systems can be used, which reduces the problem a little bit, it cannot be entirely assured that a required resource (e.g., files) is available.

Misinformation A peer-to-peer net makes it much easier to distribute false or misleading information, as no central control mechanisms or supervision instances exist. This does not only apply to misinformation. Also illegal contents or content relevant to national security can be distributed and under certain circumstances be associated with the wrong person only because such a file is made available on a computer, although the owner did not know about its existence.

Missing technology standards At the moment standards are missing for guaranteeing the cooperation of different (public) nets. If we for instance look at applications for exchanging data files, we can find that there are no technology standards in effect, which could guarantee the co-operation between different networks. The consequence is that it is very difficult to establish a new peer-to-peer net especially in the field of public data sharing. The use of a peer-to-peer net as we know it from e.g., music files implies a certain critical mass so that the user gains an advantage from the participation in the net (creating net-effects). As new participants tend to take part in a net that already offers a certain amount of data, it is very difficult to reach this critical mass nowadays. An attempt to implement a technology standard is made by SUN with their JXTA Framework (Dornfest, 2001).

Freeriding The terms freerider or freeloader in general refer to a group of users who participate in a sharing process, but only by obtaining data from other

users and not adding data to the net (Adar & Hubermann, 2000). The freeriding problem originates from the economic game theory and is a classical example for a social dilemma. The underlying theory in its most general form assumes that individuals are rational players who choose the one action alternative out of their perceived action alternatives that provides the highest personally anticipated benefit (Haug & Weber, 2003).

This behavior can also be observed in peer-to-peer networks (e.g., KaZaa). In general one can expect that the collective interest of the users of KaZaa is that as many participants as possible share their music with other users. The interest of a single person lies in the fact that all relevant resources are made available to him so that as little money as possible must be spent for purchasing CDs. There is no incentive for the individual user to buy disks or CDs and make music files accessible in a network as long as there are enough users who provide their resources without a consideration. Anyway, economic aspects are not the only ones who are of relevance in this context.

Reputation and trust Another problem is represented by the difficulty of creating reputation and trust (Dustdar, et al., 2003). In a P2P-net one is always connected with new, partly unknown people and it is nearly impossible to assess the reputation of the other peer, in other words if the source is usually providing trustworthy data or not. The consequence is that depending of the area of application special mechanisms have to be implemented which can work as substitute for trust and reputation as we know it from social networks.

Business and Revenue Models for P2P

In any case P2P technology is a good example to learn about interactions and links between technology and business interests (which do not always overlap). This can be seen when we watch the strategic investments of the technology company Intel which were done by Intel Capital. Comparable to the early investments in a lot of internet start-up companies in the last decade (it was reported that the portfolio finally consisted of approximately 250 investments) ,Intel meanwhile added P2P-start-ups to the portfolio. According to Leuf between 2000 and 2001 the company invested 13 Mio USD in Groove Networks, 8 Mio USD in the P2P search company Enfish, 22.5 Mio USD in Engenia Software and 15 Mio USD in Data Synapse, to name just a few of them. Similar activities were started from Microsoft and can be interpreted as clear indicators of business relevance.

Within the field of strategic relevant information technologies (e.g., Internet technologies, mobile technologies) P2P-technologies obviously are becoming more and more attractive as a new paradigm within electronic communication. Due to the success and popularity of applications like Napster, KaZaa and others a lot of ideas were created how to systematically use P2P networks within

an organization as well as an instrument for creating new businesses. Both areas can lead to new market opportunities and also to the foundation of new firms.

Anyhow, searching for suitable business models brings up more questions than answers. Is there a market for P2P applications at all? Is P2P commercially interesting? Is there a need for a business model and what could be its role? Who should make the first step and demonstrate practicable solutions (companies, research units)?

The motivations for initiating P2P networks or applications are quite different and cannot be not discussed here in detail. A closer look at the field shows a mixture of commercial and non-commercial motivations—both leading to innovation, some leading to investments. Commercial arguments focus on generating business with the P2P technology but also on internal use, e.g., for improving work efficiency. The interests and benefits expected differ for different players, e.g.,

- hardware manufacturer, e.g., Intel
- service provider, e.g., media companies Bertelsmann, Napster , Skype, eBay
- virtual network operators (VNO), e.g., AOL (ICQ)
- profiling, data mining, e.g., MoneyBee

If P2P is a marketable technology one of the interesting questions is whether net effects can be foreseen or even "generated". This leads to non commercial issues which are relevant also in a business context. Usually one or more of the following topics plays a role:

- reputation / reciprocity, e.g., file sharing, reciprocal support
- "open source" incentives
- elimination of (dominating) market players, e.g., KaZaa, eMule

The ways to make money with P2P leads to business and revenue models. On a general level two types of models can be distinguished, namely consumer oriented revenue models and business oriented revenue models. The first model derives revenues from services and/or applications offered to consumers and end users, the second one focuses on business-to-business relations and companies.
The consumer driven revenue models have something in common with the internet business – with the difference that generating revenue by advertising or transaction-based will be much harder. The following types of revenue models describe basic ideas of how to make money with the end-user:

- Advertising (e.g., inserting banner ads as it is done at the top of the Yahoo! Messenger window, TopText of eZula).

- Selling Software (similar to advertising it is not very likely that anybody other than big players could make much money in the end-user market).
- Transaction fees
- Subscription fees (is used by the new Napster network, subscription costs a few Dollars per month and this is the way revenue is generated. The threat would be a similar service which is for free or costs much less).
- E-commerce fees (this is a special type of transaction for the case that the user purchases something. The role shifts to a mediator, trust or sales commission representing a tried-and-true revenue model).
- Resource selling (distributed computing services could gather unused computing and storage resources and offer it on the market for money; if we look at applications like Seti@home we can see that users already allow the use of unused resources).
- Supporting hardware sales (this is for instance the case with Intel, Dell etc. The growing activities in the P2P business will lead to the need for new computers and therefore generating revenues).

The business-to-business revenue models are a bit different and as enterprise applications probably more successful. Here we can distinguish between

- Selling and licensing P2P software for the company wide use
- Hardware sales (for instance companies using the Jabber instant messaging service will need to buy the appropriate hardware to operate the system; in addition to that the same arguments apply as for the consumer models)
- After-sale-service (using the P2P network for customer support, CRM etc)
- Resource reselling (could be the resources that have been collected form the consumer side)
- Application development (as it looks now the market for P2P development tools is likely to grow over the next years.

Barriers, Inhibitors and Lessons Learned so Far

P2P is definitively a technology that has the potential of creating new business on different levels. Anyhow, what can be seen so far is the tension between regulation attempts and legal issues on the on side and fostering a free economy, disintermediation and some more effects on the other side. Some of the problems which can be seen with existing P2P applications are

- Third-party infrastructures are required
- Very costly maintenance protocols

- Maintenance protocols may compromise structural properties (e.g., load-balancing)
- Previous knowledge is lost (e.g., reputation of the peer, QoS, etc.)
- No current approach addresses security (Denial-of-Service, replay, man-in-the-middle attacks, etc. are not addressed)
- Only the owner should be allowed to update the mapping

Discussing the field from a business or market point of view usually leads to the question what can be learned from the market experiences in similar environment so far. In the meanwhile we do have a lot of new technologies (2.5/3G networks, WLAN, Bluetooth, NFC, RFID, VOIP and many more). The following aspects can help to understand key issues and challenges:

Where is the content?

- Limited market access
- Europe's MNOs decide who can enter the market
- revenue sharing is unfair for content providers in Europe (iMode NTT DoCoMO takes 9 % of the revenues for official content providers, but takes all of the airtime revenues; this is the main revenue source)
- roaming works only for voice and SMS, not for applications/services (contractual issues)

Security Issues

- users feel insecure
- privacy legislation might help to reduce the insecurity, but might also cause additional costs to providers
- payment issues: People trust their bank but not unknown provider or MNOs

Cost Aspects

- variable costs are high (transfer costs), fixed costs low
- the cost models are too complicated for users in Europe
- Charging of data transfer is per kilobyte

Quality of Service

- Quality of Service is not predictable, but also quality of data

Standards

- sometimes not detailed enough or not followed strictly by terminal manufacturers or their subcontractors (microbrowser), walled garden policy!
- heterogeneity of terminals, heterogeneity of standards by diverse MNO/Service providers

Although there are many opportunities in the emerging field of P2P applications the market still seems to be in a very early phase of development. There are not only opportunities but also dangers, i.e. there will be winners and looser. Potential winners are of course the big players like Microsoft, Sun, Intel, AOL and others who already invested in that new technology. Especially Sun Microsystems stands for the growth of the P2P market and with JXTA and Sun ONE projects moves into the direction of P2P development tools (which will be needed as a consequence of increased demand for applications). But there is a chance also for small or smaller companies especially when targeting the corporate market with enterprise wide P2P applications. And this is a market where real money can be earned (without being in direct competition to Microsoft etc). Of course, there will be a push for technology firms who help to develop protocols, standards etc which are used by other companies for their products.

The potential losers probably will be content companies. And we should not forget at this point that it were the content and media companies that had the biggest problem with Napster and Co. These companies were used to have nearly full control over the distribution process and are not willing to share that control—and exactly that happens because P2P gives control to some extent to the consumers. The discussion about intellectual property rights is led very hard and can be contrasted by control vs. freedom as two extreme positions. In addition to that there might be some threats for traditional client-/server companies as they are closely related to current internet business. Due to their technology experience they probably will be able to offer also these new kind of applications as soon as there is a demand—and as it seems at the moment the mass of ordinary internet users around the world will create such a demand.

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The Successful Model of Overseas Investment in Chinese New Media Companies

Yingzi Xu

In many countries, the new economy has become the new engine of national economy and promoted by national government. Investors usually believe that Internet represents the new economy. China has the largest Internet user population among all countries in the Asia-Pacific region. The new economy is therefore becoming more and more important within the Chinese national economy and is highly valued by the Chinese government. Chinese new media companies have played the leading roles within the new economy wave. According to PricewaterhouseCoopers, the average profit rate of the media industry is much higher than the one of other industries (Outlook 2004-2008). In China, the media has becomes the fourth biggest industry reaching more than RMB 200 billion in market value. The Chinese media market has in fact attracted a lot of venture capitalists and established Internet companies such as Softbank, IDG, Amazon and Disney. Since February 2004 a number of Chinese internet companies have been listed on overseas stock markets including NASDAQ, Hong Kong and Singapore. The total assets of the three biggest Chinese Internet portals—Sina.com, Sohu.com and Netease.com—have reached USD 2.6 billion. However, China's policy, environment and culture are very different from those of the developed countries. Just like looking at flowers in a fog, some overseas investors came to China and left soon after with many questions in their minds. Meanwhile, some investors are very successful in the Chinese market. This paper tries to study some successful investment cases in Chinese new media business. By discussing success factors and models related to investments in new media, the paper aims at increasing the understanding of theorists and practitioners on Internet investment in China.

Review on the Chinese Media Market

Topics such as financing of Chinese media companies, feasibility of foreign media investment in China, interpretation of Chinese media law, and return of venture capital have lately caught the attention of many media and economics scholars. In particular, the question whether Chinese media should be commercialized raised a hot debate among Chinese scholars, media professionals and government policy markers.

However, the issues of Chinese media investment and Chinese media financing can not be discussed without first clarifying ownership structure and

nature of Chinese media. For a long time, Chinese media has been regarded as tongue of the Chinese Communist Party and Government. Chinese media companies could hardly be listed on the Chinese stock market. So far, only ten media companies have been listed on China's stock market (Zhao, Zhou & Wei, 2004). In 2002, the China Securities Regulatory Commission finally announced that the "communication and media industry" is one of the thirteen basic industries up for listing. The ownership and commercialization of Chinese media have been developing since then. At present, advertising agencies, distribution and publishing companies are opened to overseas investors and Chinese investors who have not been in the media industry before. Although content production within news and publishing companies is still tightly controlled, overseas investors are allowed to involve into the film and television production industry and have no more than 49% ownership in a joint company.

The new media is the most opened field among all media industries and has attracted most overseas investors so far. The main Chinese law regulating the new media field is the "Internet Information Service Regulation", which uses licenses to control the commercial Internet information service. Foreign companies can invest in any places in China without geographical limitations apart from the 49% maximum ownership in a joint venture (Zhao, Zhou & Wei, 2004). In general, non-professional investors and industry investors are very active in the overall media market, while professional investors are not. Past experience shows that the risk of failure for laymen investors is very high which means that media investors in China are not very successful Non-governmental domestic investors are the leading players while international investors represent only a minority (Meitiandu, 2004). However, in the arena of new media investment, overseas and local investment organizations showed different figures in 2004: local players have slowed down and overseas investors have gained comparative advantage in this field. Mr. Dan, CEO of China Science Start-up Investment Company, argued that "whether venture capital firms can operate well does not rely on their capital, but relies on their operation model and corporate governance" (Sun, 2005).

There are basically two models to invest in the media field: the direct investment model and the indirect investment model (pure financial investment). Since China has just started to promote the commercialization of the media industry and its capital market is far from mature, most overseas investors chose to invest directly in Chinese media companies. According to Zhao, Zhou & Wei (2004), the non-financial investment model includes Sino-foreign joint ventures, general cooperation, joint investments, copyright transfer, advertising agent and single project cooperation. The financial investment model has hardly existed until now, since there are only few Chinese media companies listed on the stock market. In recent years, more and more overseas investors preferred to step into joint investments or set up mutual funds in the Chinese new media area (Chen, 2003).

A specific problem that overseas investors have to face is that China does not provide any official and practical ways to withdraw their venture capital. Many scholars (Wang, 2003; Liu, 2003) mentioned that this problem has largely restricted overseas investment in Chinese media industry. In developed countries, venture capitalists usually exit their investments by selling the investee company, opening an IPO or transferring their stockholder's rights. Until now, China has not set up its own NASDAQ and foreign currencies are restricted to flow out. All these restrictions have made the IPO in overseas market as the best choice for most venture capitalists in China.

Method

The main research method for this paper is documentary analysis. Multiple sources include relevant journal articles, magazine and newspaper articles, annual reports of most famous Chinese new media companies and investment companies. For the purpose of the research topic, the research period has been limited between January 1999 and October 2004. In 2001, China has been granted access to the World Trade Organization as official member. Overseas Internet investment is legally allowed since then. During this period, China's new media companies experienced a cold winter together with the rest of the world and China has became a hot investment target again within the world stock market since 2003. Looking into the English literature, the author searched a journal database at the library of the University of St. Gallen. Key words for search include a number of relevant topics such as "overseas investment in China", "foreign investment in China" and "China Internet". Online databases include Electronic Journals from the University Library in Regensburg, ScienceDirect, JSTOR, and EBSCOhost. As for the Chinese literature, the author used same key words and searched relevant articles within the China Academic Journal Database CNKI. The finding of this research is summarized in the following sections and used as basis for a discussion of the research topic at the end of the paper.

Findings

For policy restriction and other reasons, the overall amount of overseas investment in the Chinese media market has no beent that relevant so far. However, overseas companies have played leading roles within the new media market. In 2004, newly-added investment from overseas venture capital counted for more than 55% of the total value of venture capital in China (Sun, 2005). A survey (Sun, 2005) shows that in 2004 China had RMB 524,540 newly-added venture capital which grew 41.67% compared to 2003. Many famous Chinese new media companies accepted investment from abroad (see table 1). The most active and famous foreign investors in China include IDG VC, Doll Capital

Table 1. Main New Media Companies and Main Overseas Investors

Main Chinese New Media Companies	Main Overseas Investors
Sohu.com	IDG, Dow Jones, Intel etc.
Sina.com	Dell, Softbank, Goldman Sachs, Creative Technology of Singapore etc.
Netease	Softbank
Ebay.com.cn (Yiqu)	Ebay
Shanda	Softbank
Joyo	Amazon
3721	Yahoo!
Baidu	Google
Ctrip	IDG, Carlyle, SOFTBANK

Management, Intel Capital, Goldman Sachs, Softbank Asia Infrastructure Fund (SAIF), Walden International Investment Group and Warburgpincus.

These investment companies often adopt the direct investment model in China. Before 2003, many of them invested in start-up or early stage companies and kept some shares in these companies. However, fewer and fewer foreign investors would bet on seed companies at present. Lot of these investors changed their investment strategy and now prefer to put their capital on a few promising big projects (Chen, 2004). According to Mr. Huang (SAIF), "We do not pursue a 10 times return, but the successful rate of our projects has to be higher than 70%, which is very different compared to international standards. This strategy is decided by the domestic marketing environment." SAIF invested 40 million on Shanda last year.

United investment and cooperative funds are very common investment methods in China. As the financing of new media companies usually requires high amounts of capital, cooperative funds provide many advantages for such projects. The purpose to set up cooperative funds is to allow foreign investors to involve into Chinese currency projects. Chinese partners can gain not only management experience from their overseas partners but also have access to capital from overseas markets. Successful examples of these funds include the cooperation between Shenzhen Capital Group and Softbank. Both sides invested USD 1 million to register a new company to manage their mutual fund. Shenzhen Capital Group financed RMB 100 million in China and Softbank provided the same amount of money in foreign currency abroad. The profits of their investment are then shared between the two companies (Chen, 2003).

In recent years, more and more mergers and acquisitions took place in China. For example, eBay acquired the Chinese leading online business company Yiqu. Yahoo! acquired 3721 for USD 120 million. Reed Elsevier group acquired the financial information provider PRCInvestment.com. According to experts, the Chinese ICT market has been quickly developing with an annual growth rate of 30% to 50%. Other countries have been

developing at a 10% annual growth rate. It therefore seems that China will become the biggest technology market in 2030 (Lei, 2003). The prospect of the biggest market has attracted many investors from all over the world to test the Chinese market. They are now waiting the change of Chinese policy and the development of the Chinese capital market. Meanwhile, their competitors come from the Chinese local governments. Statistics show that the total amount of venture capital in China is less than USD 300 million. It is estimated that China itself reserved RMB 40 billion to be destinated to venture capital investment. Most local Chinese venture capital and venture funds are owned and managed by local governments via credit guarantee. Compared to the Chinese venture capital funds, overseas investors have more experience in the marketplace and because of that achieved more success in China so far.

However, failure examples are not uncommon. Pearloriental Internet Technology invested in eight Internet companies—including Mingrenmingxing and Zhongguoxiansheng—within a short time and the whole capital investments simply disappeared in a year. Another example is eSamsung which was set up by Samsung group to be responsible for its global investment business. One year after its foundation, eSamsung decided not to invest in new projects anymore and not to be a venture capital firm anymore (see *Three Generation of Chinese Venture Capital*). Analysts argued (Liu, 2003) that "due to the difficulty to reach high rates of return and flow of capital, venture capital firms lost their motivation to do business". According to international custom, VC usually do not involve into the daily operations of their invested companies. However, such investment model faces a high risk in China as a lot of start-up companies often do not obey to the game rules (see Chen, Y., 2004).

Now the question is whether there is a successful model of overseas investment in Chinese new media companies and if yes, how it looks like. Yes, IDG is a good example. IDG Technology Venture Investment (IDGVC) is *the* most famous and successful venture capital company in China. As early as 1980, IDG and the Ministry of Information Industry established the first publishing joint venture in China—China Computer World Publishing Company—and launched the Computer World weekly magazine. IDG holds a 49% share in this joint venture. So far, IDG published 12 IT-related newspapers and magazines in cooperation or joint venture with other Chinese partners. It ranks as the first IT media group in China and has nearly USD 100 million in annual revenue. IDG business covers publications, research, venture capital, events and exhibitions, film and television production as well as training. IDGVC was one of the first American venture funds to enter the Chinese market. It focused on new media and high-tech industries such as the Internet, information services, software, telecommunications and networking technology. Many leading Chinese new media companies received funds from IDGVC such as Baidu.com, Eachnet.com, Sohu.com, 8848/Intellgent, Emay, Yesky. To date, IDGVC has invested more than USD 100 million in China and planned to invest a lot more in the coming years. According to Mr.

McGovern, chairman of IDG, the company reached an average investment return rate of 45% out of 30 Chinese projects from which the company already withdrew. This investment return rate is higher than any other rate coming from other businesses in which IDGVC is involved.

Having found promising companies, IDGVC is still willing to provide venture capital to start-up companies in their first round of financing. The investment size in individual companies usually falls within the range of USD 500,000 to USD 5 million. IDGVC often acts as main investor and usually provides contacts to other venture capitalists, which could be interested in the target companies. It usually does not involve into daily operations and management of the companies but involves into their board of directors. It often plays a leading role to help the companies attract more funding. As already mentioned, due to foreign currency restrictions and other policy reasons, it is not easy to withdraw the invested capital from the invested companies. A listing on the stock market is one way and the investment in new projects is often used, too. Relying on IDG's IT publication and research network, IDGVC is able to offer a full-range of services to the companies in which it invests: this includes finance, law, government relations and training. Summing up, IDG developed a unique investment model in China (see Figure 1). Its business has been centered on the IT paper publishing business, though it spread into related business too. All its business is characterized by a common IT and new media information platform which allows to interactively share information within the entrepreneurial network of investors and investees.

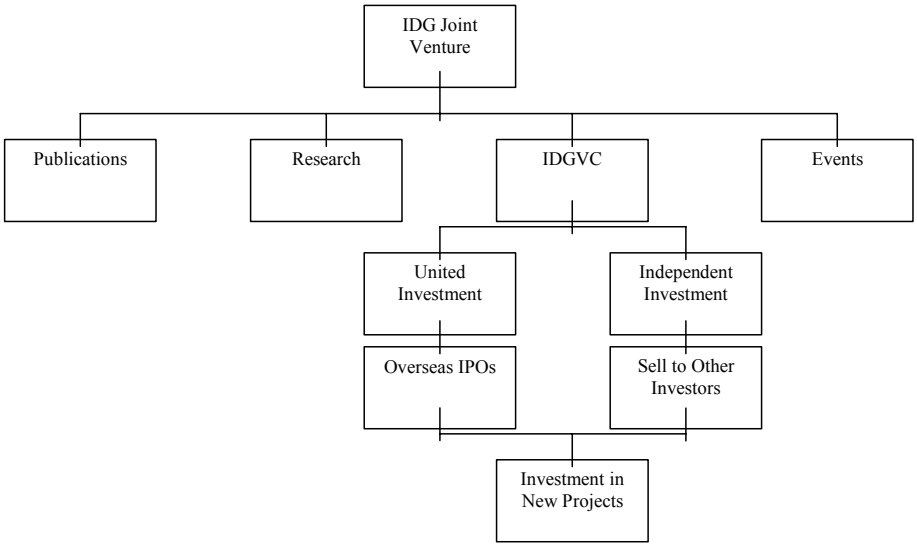

Figure 1. IDGVC Investment Model

Discussion

At this point a question arises: why have some companies been successful and some other companies failed their investments in the Chinese new media market? We can see that the amount of capital invested is not that important, on the contrary other comparative advantages linked to the resources play an important role. Based on the analysis of the IDG case, the main comparative advantages needed to invest in the Chinese new media market can be summarized in six points: 1) human resource advantage, 2) technology advantage 3) brand advantage, 4) promotion and information advantage, 5) government relations advantage, and 6) capital advantage. IDG owns a comparative advantage in all six areas.

With regard to human resources, to step into the Chinese market IDG employed managers like Mr. Xiong who had work experience in both China and America. These senior staffs are very familiar with operation processes both in IDG home country and China, which is a very unique environment. This human resource strategy has been very helpful for IDG to develop its business in China. In terms of technology, IDG has years of experience in cross-national business and technology resources in IT media content. As to the brand factor, IDG is very powerful. In the U.S. where the new economy started, IDG has been famous since the 1960s. Based on its famous brand in the home country, IDG could easily earn credibility among Chinese partners and clients. With regard to promotion and information resources, IDG has dozens of influential IT media papers. While introducing the latest IT development to China, IDG could also promote its good image within the Chinese IT and new media community and therefore earn reputation. Each year, IDG organized a number of IT industry exhibitions which set up a wide network. All potential clients know IDG. In this case, promotion and information resources are related with and complement one another. IDG can count on very strong relationships with the Chinese government. It is the first foreign enterprise that set up a joint venture with China to publish magazines legally. When the company got the passport to forbidden areas, IDG gained a monopoly market position as foreign investor. In terms of capital resources, IDG does not have more obvious advantages compared to other competitors. However, owning most of comparative advantages needed to invest in the Chinese market, it is clear that IDG takes much less risk than other investors and therefore can win the competition battle.

Apart from the regular data which investors and researchers need to pay attention to, such as the investment market situation, investment policy and relations, the following points are also of particular importance.

Investment timing

Timing is always important, in every place and for every project. However, timing is one of the most important factors for success in Chinese new media or media market today. The Chinese media industry is just starting to be commercialized. Catching the right time and enter the market earlier than competitors can be determinant for the success or failure of an investor to a large degree.

Investment partner

This is also related to the characteristics of the Chinese media industry. At present, most media are still owned by the Chinese government, while the commercialization process is developing step by step. In order to have a leading role in the Chinese marketplace, a breakthrough of the government policy has being decided in support of government departments or key government-owned media. To gain investment partners like the Chinese Ministry of Information Industry is a very clever strategy.

Conclusions

According to the most recent breaking news (February 2005) Shanda acquired 19.5% of the ordinary shares of Sina.com, one of the biggest Chinese Internet Content Providers. This event shows that Chinese domestic companies started to play a substantial role within the new media market. The new media investment market is becoming more and more mature and competitive. Along with the opening of Chinese media market after China's entry into the WTO, expanding their market share becomes an essential survival task for most media companies. It is predicted that a new wave of mergers and acquisitions will take place between this and next year.

Still, the Chinese capital market is very controlled. Media law and regulation have not been developed very efficiently. Regulations about technology share and intangible assets share are not favorable for venture capitalists to withdraw their investment. There are also many restrictions for overseas investment in the telecom value-added area. However, the development of the Chinese media and overall domestic capital market will be an ongoing process. It is expected that overseas investors will use more and more stock investment models and direct investment models. Current share-holding investment models will occur less and less. At this stage a perfect and widely-recommended investment model is hard to define in an ever-changing market like China. Successful examples such as IDG can not be copied without considering the dynamism of the Chinese market environment. This paper has collected some observation and thoughts related to the current investment situation in the Chinese new media market. However, Chinese investment models and theory building within the media investment field need further in-depth studies and research.

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Censorship, Government, and the Computer Game Industry

Robert C. Burns
T. Y. Lau

This chapter seeks to explain the computer game industry reactions to the threat of government censorship. The industry reactions will be described within a conceptual framework that details the roles and relationships among all players. This framework will provide a backdrop for discussing the enduring issues for profitable computer game content relative to the applicable delivery technologies, cultural ideologies and industry market structure. Chapter findings will be supported by relevant literature citations and interview data collected from representatives of United States computer game development and publishing companies. The chapter will conclude with future research questions suggested by this work.

Computer game industry gross revenues are estimated to be $28 billion dollars worldwide by 2005 (Lowenstein, 2003). Computer games are financially successful in part because they allow their creators to offer an interactive experience involving audio, video, text and animation to create a desired outcome (otherwise known as a win condition) that can alter or reinforce a user's belief system. This was explicitly acknowledged by the New Zealand OFLC (Manhunt, 2005) in their written explanation for banning a computer game called *Manhunt*:

> *The impact of the console game medium is high. PlayStation 2 is a state of the art gaming format that provides high quality images and sound. Unlike more passive media—such as film and video recordings—the console game medium allows the player to interact with the images on screen directly and to control the actions of a character, in effect translating viewer actions and choices into onscreen action. This is particularly relevant to Manhunt which does not offer the player a choice as to whether or not to kill, but instead only offers a choice as to how brutal the kill is to be.*

This means that the creative thinking going through the concept and software development process can threaten some socio-political status quos resulting in censorship of game content. Specifically, games involving violence, sex (Lowenstein, 2003) or contrary ideologies (Kreimeier, 1999) are at risk of being banned:

> *German legislation… strives to prevent exposure of minors to content that might be "ethnically disorienting."*

While the threat of lost revenue from censorship exists, the computer game industry seems more concerned with restrictions on content creator expression, according to the current president of the U.S. Entertainment Software Association (ESA) (2004):

> *… as long as critics and regulators see interactive entertainment as just a game, they will tend to be dismissive, less respectful, and more willing to censor content in ways they would never censor a film or a book*. (Lowenstein, 2003)

To-date, besides governmental lobbying to avoid or overturn censorship legislation, this industry has three responses to existing or potential censorship of its content: doing nothing, localization and self-regulation. This chapter will examine each response and discuss its consequences for impacting freedom of expression for computer game makers and freedom of experience for computer game users. Cases from the United States, European Union, Australia and New Zealand will be used to address the following questions:

1. What are the forms of computer game censorship?
2. Where do film censorship criteria apply to games?
3. How does the computer game industry react to these forms of censorship?

Answers to these questions may shed light on the models of censorship used, and the potential impact on the freedom of expression of game creators and users' freedom of experience. This study may also permit industry participants to see the dynamics behind censorship that limit their effective response to it.

The Study's Conceptual Framework

This study is primarily focused on censorship of content created by service providers (mostly software developers). If censorship suppresses the work of the service provider then consumer experience is correspondingly limited and no economic value from that suppressed content can occur.

Figure 1 depicts triangular relationships within and between the players (government, service providers and consumers) involved with censoring computer games. It is these players and their relationships that comprise the conceptual framework for this study.

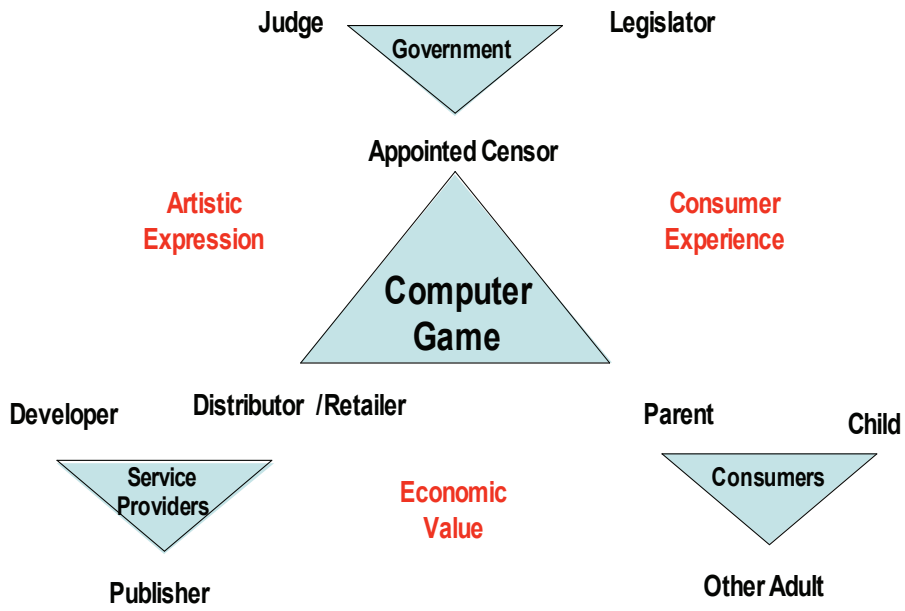

Figure 1. Computer Game Censorship Conceptual Framework

The middle triangle in Figure 1 illustrates the content and technology impacted by censorship (the computer game) as well as three enduring forces that need to be balanced which are artistic expression, consumer experience and economic value:

- **Artistic expression** in computer games is embodied in all the visual, audio, textual and interactive content generated to represent one or more espoused viewpoints
- **Consumer experience** in computer games comes from being exposed to their content as well as any added by other consumers of the same game (i.e., during multi-user games)
- **Economic value** comes from a computer game when a consumer yields some form of legal tender in exchange for the gaming experience

The top triangle in Figure 1 shows the governmental forces responsible for implementing censorship: the Legislator defines what is to be censored; the Judge approves the use of legislated censorship and the Appointed Censor applies the legislation to content creation (artistic expression) and content consumption (consumer experience). In those jurisdictions that use self-regulation, the Appointed Censor is usually a group of computer game industry representatives.

The left triangle in Figure 1 illustrates the main service industry participants that bring computer games to market: the Developer creates the game; the Publisher packages it for consumption and the Distributor/Retailer makes it available to consumers. It is possible for these participants to be divisions within the same or different companies.

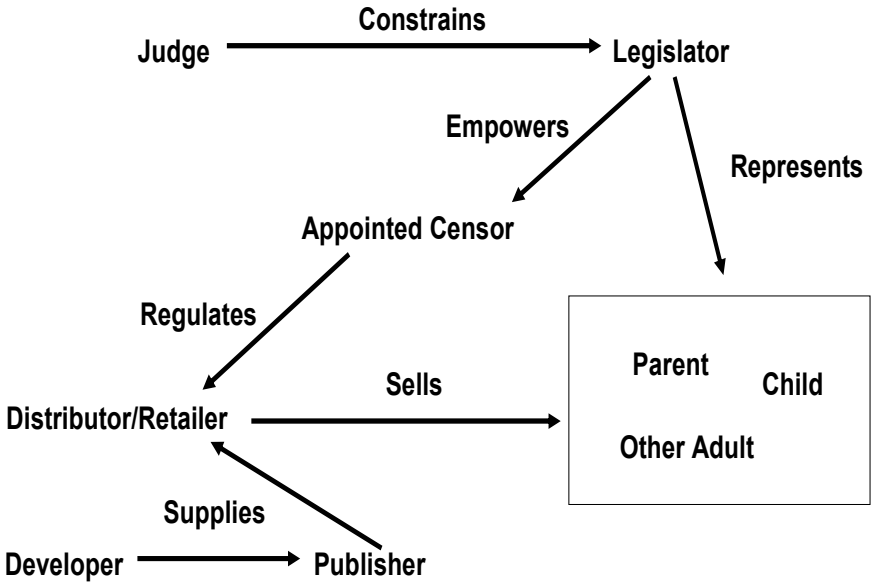

Figure 2. Relationships between Conceptual Framework Players

The right triangle in Figure 1 explains the relationships between all the types of computer game consumers: the Parent buys games; the Child experiences games and the Other Adult can do both. It is possible for a Child to also purchase games but it is assumed that funds for this purpose come from Parents. The Other Adult also represents any citizen that chooses not to experience a computer game.

Figure 2 shows how each of the players in the conceptual framework relate to each other. The box in this figure surrounds the players that are not directly addressed by this study (i.e., the consumers) but are the recipients of government and service provider activities involving computer game censorship.

As indicated in Figure 2, censorship is mostly about constraining freedom of artistic expression but in some jurisdictions the consumer experience is also regulated. The government in Germany will definitely prosecute a consumer knowingly in possession of banned computer games (Kreimeier, 1999). Australia (Australian OFLC, 2005) and New Zealand (New Zealand OFLC, 2005) have similar laws that have been used against consumers exchanging

"objectionable" content on the Internet (New Zealand Department of Internal Affairs, 2004) that could be used against computer games banned there.

Because censorship indirectly impacts economic value, freedom of expression (content creation) and experience (content consumption) are the perspectives that must be balanced. Yet, it is not the expression or experience of all ideas that are threatened. Repeatedly, games involving violence, sex or contrary ideologies (e.g., Nazism in Germany) (Kreimeier, 1999) are universally at risk of being banned by one or more local governments. Usually, protecting children from harmful exposure to these concepts is cited as the justification for being concerned about computer game content (European Union Commission, 2002) but in some jurisdictions protecting adults from the same thoughts is given equal weight (Ang, 2004).

Control of artistic expression is generally deemed by governments easier than control of consumer experience because it is generally easier to identify and locate computer game companies than all of the consumers of their products within any jurisdiction. In the next section we will describe the different forms of censorship that are commonly used.

Forms of Censorship

Censorship can be in three forms:

1. pre-censorship, content subject to approval before circulation based on published rules and regulations;
2. post-censorship, based on complaints filed and the government takes action;
3. self-censorship, based on the creators' fear of punishment or perception of anticipated rejection by government regulations and intention to preserve the industry reputation in order to prevent government regulation intervention. Self-censorship can be found in industry standards (where it is generally known as "self-regulation") or in-house manuals.

Pre- and post-censorship can be seen in Australia (Australian OFLC, 2004) and New Zealand (New Zealand OFLC, 2004) where the standards for film censorship are also applied to computer games. While neither jurisdiction explicitly declares why the censorship criteria for film is applied to games, Australia does acknowledge that the interactive nature of computer games yields opportunities for receiving video and audio "rewards" (Australian OFLC, 2004) that are applicable to existing censorship criteria.

Self-censorship exists in the United States (ESRB, 2004) (ICRA, 2004) (RSCA, 2004) and the European Union (European Union Commission, 2004) (PEGI, 2004) where the rating systems are similar to those used in their film industries. The Interactive Software Federation of Europe (ISFE) created PEGI

in a similar fashion to how ESA (2004) created ESRB (2004). However, the ISFE explicitly used existing film rating criteria for PEGI where ESA seems to have implicitly done the same with ESRB.

Sometimes, a Publisher will impose self-censorship upon computer games created by their Developers through enforcement of an in-house manual. This is done when the Publisher recognizes the need for censorship in a target market before either an industry standard or governmental decision has evolved there. An example of this happened in the late 1980s when Nintendo realized that the Japanese versions of their games might cause controversy if realized unaltered in the United States. Interestingly, once the ESRB became established in the United States, Nintendo made their games conform to it and ceased to enforce use of their in-house manual which was actually more restrictive than the ESRB rating system (http://www.filibustercartoons.com/Nintendo.php).

Computer Technology Impact on Censorship

Besides providing a powerful medium for expression, computer technology also defines how a game may be delivered and experienced. This means that the forms of censorship are impacted by how computer technology is employed in games. A computer game company makes decisions about which technology to use based upon their own analysis of the game's target market(s). Figure 1 shows this by relating computer game economics, expression and experience.

If a game is economically viable when delivered via the Internet, then it is more difficult to effectively apply any form of censorship because either the game server or browser may not reside in a jurisdiction employing censorship (Akdeniz, 2000). Internet delivery of games also increases the probability of multi-user experiences since the Internet readily supports collaboration technology (this is the primary driver behind the selection of Internet delivery being economically viable). Allowing users to interact with each other via the medium of a game really makes it difficult to censor content that is only enabled by the game environment but originates with its users.

Conversely, when delivery of a game cannot be economically done via the Internet (e.g., it is delivered on a CD-ROM or DVD-ROM) then it becomes more likely to be a single-user experience (because collaboration technology requires some form of network like the Internet) and also more easy to censor since the game resides on a physical medium that can be intercepted by an Appointed Censor.

Study Data and Validation Method

This study includes analysis of the laws and regulations stipulated by the United States, European Union, Australia and New Zealand governments, including their respective perspectives on how and what to do regarding the various forms of censorship.

The United States (U.S.) of America's Constitution guarantees the right to the freedom of expression in its First Amendment (http://www.house.gov/Constitution/Amend.html) which has consistently forestalled all prior and ongoing attempts by state and municipal governments from implementing pre- and/or post-censorship laws and regulations. However, the U.S. computer gaming industry has decided to implement self-censorship in order to help the U.S. government maintain this constitutional position (ESRB, 2004):

> *According to the Federal Trade Commission, the ESRB is "the most comprehensive of the three industry systems" and "there is much in the game industry's rating disclosure requirements that merits duplication by others."*

The U.S. community of Developers supports the ESA position on self-regulation through the International Game Developers Association (IGDA). As part of that support, the IGDA has a set of online forums (http://www.igda.org/Forums) where Developers can discuss issues pertinent to the industry. Although the forums are available to anyone on the Internet to read, only registered users may post content. Hundreds of posts have been made in these forums since it began in June 2001 by the people most directly involved with the creation of computer game content.

The data used to validate this study's U.S. findings comes from a sample of postings in the IGDA's Business and Legal Issues forum that were a direct result of a discussion thread led by one of the study authors between October 2 and 6, 2004 concerning the focus of this study:

> *I'm interested in conscious business strategies or tactics used in the computer game industry to proactively deal with censorship.* (Burns, 2005, p. 1)

For example, when asked how Developers tended to address censorship using localization techniques, Tom Sloper (a Developer and U.S. industry consultant) said:

> *Make the game according to the mores and tastes of the largest target market territory (the U.S.). Then localize as needed (and insofar as you are able) for the secondary and tertiary market territories.* (Burns, 2005, p. 1)

When asked how to substantiate this claim, Tom Sloper said:

> *…telephone each company and ask to speak to the localization manager (not that that would get you anywhere—at many companies, producers manage their own localizations—thus there may not be a 'localization manager' per se)* (Burns, 2005, p. 1)

The European Union (EU) acts similarly to the U.S. in regards to computer game censorship (i.e., provides no laws in support of pre- or post-censorship) but allows its Member States (like Germany) a lot of latitude to impose laws banning specific computer games (European Union Commission, 2002). In response, a large subset of EU Member States has adopted support for the Pan European Games Information (PEGI) rating system as a means of self-censorship by the computer gaming industry in those countries. PEGI is explicitly based on film censorship criteria per the explicit intention of the ISFE:

> *ISFE has entered into a contract with the Netherlands Institute for the Classification of Audio-visual Media (NICAM) for the administration of the PEGI scheme…In the UK, the Video Standards Council (VSC) will act as the agent of NICAM. In all instances, the voluntary PEGI system is subordinate to the pre-existing, wider framework set up, run and enforced by governments to ensure the protection of minors. As a consequence, the PEGI system is subordinate to all existing and future laws and regulations in this area*. (PEGI, 2004):

Where PEGI has not been adopted in the EU, pre- and post-censorship is allowed to reign as long as it does not interfere with EU e-commerce law (Verbiest, 2003).

Australian law supports pre- and post-censorship (Australian OFLC, 2004) requiring expense on the part of computer game service providers in order to advertise or sell games in Australia. Under Australian national law, its OFLC provides countrywide classification of content and the law enforcement agencies of the various states and territories of Australia prosecute violations. So any criminal charge against a person in relation to material that has been refused classification by the Australian OFLC is conducted under the relevant state or territory law.

For example, the NT Act (2004) appears to make it an offence to sell, or to "demonstrate in a public place", or to "demonstrate" any refused classification (RC) game in the presence of a minor, but does not specifically make it an offence for an adult to possess or play a RC game in private. It is also an offence to "use a computer service" (i.e., download) to obtain a game that contains "objectionable material" (i.e., a RC game), but it is a defense to such charge to show that the game has "recognized artistic, scientific or literary merit" and that obtaining the game was "for the public good" (i.e., it is not sufficient merely to show that the game had artistic merit).

New Zealand censorship law (New Zealand OFLC, 2004) is similar to Australian national law where pre- and post-censorship of computer game content is concerned except New Zealand censorship law enforcement is applied uniformly across that country:

> *The Department of Internal Affairs investigates and sometimes prosecutes people who deliberately collect objectionable material and find ways to distribute it to other people via the Internet*. (New Zealand Department of Internal Affairs, 2004)

Findings

Research Question 1: What are the forms of computer game censorship?

This study has shown that pre-, post- and self-censorship exists in the computer game industry within the U.S., EU, Australia and New Zealand. Where pre-censorship exists, the Appointed Censor makes the censorship decisions but the Legislator has the biggest influence on how policy is made. Post-censorship is generally implemented in a manner where a Parent or Other Adult makes a complaint (becoming the decision maker) then local law enforcement acts under the influence of the Appointed Censor only where banned games are concerned. Self-censorship results in the computer game industry making censorship decisions under the influence of Legislators and Judges.

Table 1 summarizes the impact of censorship upon computer games and illustrates that only consumer experience is impacted in jurisdictions that favor self-censorship.

Table 1. Study Findings Relative to How Censorship is applied in the United States, European Union, Australia, and New Zealand

	USA	Impact	EU	Impact	Aust.	Impact	N.Z.	Impact
Pre-censorship	No	None	Varies	Artistic Expression	Yes	Artistic Expression	Yes	Artistic Expression
Post-censorship	No	None	Varies	Economic Value	Yes	Economic Value	Yes	Economic Value
Self-censorship	Yes	Consumer Experience	Yes	Consumer Experience	No	None	No	None

Research Question 2: Where do film censorship criteria apply to games?

This study has shown that film criteria apply to games in all jurisdictions, irregardless of the form of censorship employed. While Table 1 implies that consumer experience is impacted by use of film criteria in self-rating systems, use of similar criteria in pre- and post-censorship jurisdictions results in similar impact to the consumer experience.

The New Zealand OFLC (2004) recognizes that new criteria may need to be applied to computer games but must await new legislation before acting:

> *While the Government has been considering amending the legislation to take account of technology such as this, the Office is required to operate under the existing law.*

Research Question 3: How does the computer game industry react to these forms of censorship?

To-date, besides governmental lobbying to avoid or overturn censorship legislation, the computer gaming industry has three responses to existing or potential censorship of its content:

- **Doing nothing** which allows full freedom of artistic expression in the complete ignorance of the censorship criteria of any jurisdiction
- **Localization** which alters computer game content to make it acceptable to a specific jurisdiction's censorship criteria
- **Self-regulation** which is the application of a rating system to games as a form of self-censorship

The authors of this chapter will now examine each response and discuss its impact on freedom of expression for computer game makers and freedom of experience for computer game users.

Doing Nothing: The Developer's Preferred Choice

When Internet delivery is economically viable, doing nothing about censorship is a rational business strategy and is much preferred by the Developer since it eliminates a whole class of requirements that can not only impact their artistic freedom of expression but also make the game more expensive to produce (which in turn may reduce funding available for artistic alternatives). Unfortunately, too often game developers choose this option simply to avoid the issue instead of dealing with it as a legitimate content creation business issue. This inappropriate use of the "doing nothing" response has prompted the computer industry to help educate its developers about the entire censorship issue (IGDA, 2004). The inappropriate use of "doing nothing" also threatens to keep its audience from experiencing computer games, so all service provider players have a vested interest in making sure Developers care about censorship.

Following is a Business and Legal Issues forum posting by Jason Della Rocca, the IGDA Program Director (essentially the organization's chief operations officer) that illustrates dominance of the "doing nothing" tactic in this industry:

> *It should be noted that for the vast majority of games, this is a non-issue. To start with, only about 10% of games are rated M and potentially contain content that would trip censors. And, of those 10% very few are censored. It has*

happened a few times in Australia (eg. GTA, Manhunt), and a few more times in Germany (with their "index" of banned games). Obviously, there are more cases, but they only represent a tiny fraction of game industry output...Tom is right in that most publishers pick their target market and make the game for them. Then, they look at further markets where the game can sell. In most cases this does require some investment to localize to the region, but this is much more to do with spoken/written text, and usability issues, and much less about censorship concerns...In terms of the USA, publishers usual decide in advance what rating they want and ensure the content/game that the developers produce will fall within the ESRB guidelines to hit the desired rating. Going for an M-rating is usually a conscious marketing/business decision on the part of the publisher (Burns 2005, p. 1)

Localization: An Expensive Option

If government censorship of computer game content already exists and the marketing strategy for a game calls for it to be sold at a local retail outlet then customizing a game to fit the needs of a particular jurisdiction is an option and is known as localization which should not be confused with globalization. The latter approach to software development tries to eliminate any cultural references from the product so it will be equally acceptable everywhere (Stathis, 1998). Globalization in computer game development is not used to address censorship issues concerning violence, sex or contrary ideologies so it will not be further discussed in this chapter.

The decision to localize a computer game is complex which is one of the reasons that it is an expensive option. Like film, computer game development is expensive because it takes a long time and involves many people. Unlike film, most computer games have a very short usable life due to the factor of computing obsolescence (all software depends on an underlying computing platform and consumer computing platforms change rapidly) as well as a marketplace that treats old software badly (new platforms bring new capabilities to software so old games look old faster than old movies look old). This means that very few computer games can be sold more than two years after they are released and is the principle reason that computer game publishers cannot maintain a backlist of titles that continue to produce revenue over a prolonged period without incurring continual software upgrade costs.

For a Developer, there is real pressure to complete a game before its underlying technology is gone. For a Publisher, there is little interest in maintaining something that requires continuous software upgrades in order to support it in the marketplace. For the Distributor/Retailer, fighting for shelf space places an emphasis on having something new. Anything that slows down the rate of introduction of new content is not favored by anyone in the computer game industry.

So, the only way localization works for computer games is when it is introduced at the beginning of a product's life cycle – before there is anything

built. This is the only chance a product can be built on-time and within budget while still maintaining an acceptable level of quality. However, localization still will add significant cost to the project and needs to be factored into the return-on-investment analysis of each game (Collins, 2002) which was validated by Chris Burke, another Developer posting in the IGDA Business and Legal Issues forum:

> *Some game companies (Raven Software) have a "policy" or standard operating procedure of including a software-adjustable violence setting in their violent games. This setting generally turns off gore, blood, mutilations, and sometimes even changes which cutscene plays. When the game is to be released in a country or jurisdiction with strict censorship, the game is modified to force the violence setting to its lowest level and to remove the violent assets from the game code. Example of a title using this strategy: Raven's Heretic 2.* (Burns, 2005, p. 1)

If localization is deemed a cost effective technique for a computer game project then it constitutes a form of self-censorship on the part of the game developer because every design decision must be filtered through the localization criteria which are documented via in-house manuals. In some cases, this might preclude an entire game from being built at all (e.g., there are a significant number of computer games that require expressions of violence) (Anders, 1999) if its central premise needs to be removed in order to comply with cultural standards in multiple markets.

Assuming that the central theme of a computer game is not the casualty of localization criteria then altering a game component introduced to elicit an emotional effect is likely to be. As Chris Burke explains, if a local cultural standard eschews visual depiction of human death then a game about combat could simply have robots instead of people:

> *Another common strategy (Valve) is to use alternative storylines and color schemes to switch between violence and non-violence. The version of the game to be shipped to a strict jurisdiction is shipped with the alternative color scheme and story line. For example, a game that involves killing lots of people, and that has lots of blood, morphs into a game that involves destroying lots of robots, with lots of oil splatters: red assets become black. Example of a title using this strategy: Valve's* Half-Life *(German version).* (Burns, 2005, p. 1)

However, this alternative definitely constrains the Developer's ability to express the nature of combat and certainly alters the experience of the human player to the point of not being encouraged to feel anything about the risk of death from warfare.

Self-Regulation: Is It Effective?

In jurisdictions that favor freedom of speech, self-regulation (also called self-rating) is the preferred method of controlling game content by the computer gaming industry ESA (2004), ISFE (2004) and government (McGuire, 1999). The only issue with self-regulation is whether or not it is effective. This is the concern mostly of parents of children that play computer games because the parents generally do not wish to learn enough about each game in order to make their own determination whether or not it is suitable for their children. Unfortunately, even when a rating system exists, many parents do not use it (Singer, 2001). An ineffective system that does not appease those who favor censorship of computer games will increase the likelihood of state-sponsored censorship replacing it. So, poor self-regulation actually can result in even less freedom of expression and experience than the "doing nothing" strategy.

It appears that the poor acceptance of the RSAC system RSAC (2004), ICRA (2004) caused the computer gaming industry to more aggressively adopt its competitor, ESRB (Lowenstein, 2003), which has become such a success that the European Union has adopted a similar system called PEGI (2004). While it is too early to tell if PEGI will be as accepted in Europe as ESRB is in America, early indications point that way (Asbjørnsen, 2004).

From the viewpoint of governments and the computer gaming industry, acceptance means the problem is solved as long as the parents of game-playing children trust that this industry can objectively govern its self-rating system to their satisfaction. Since the industry replaces the impartiality of the government, there is the concern that individual violations of the system will not be properly adjudicated or corrected (Campbell, 1999). This is why state-sponsored censorship continues to be discussed in jurisdictions that currently employ self-rating of computer games (Thorsen, 2004). Unfortunately, even a well-designed self-rating system can fall prey to market forces (Thorsen, 2004). Consider how the complete avoidance of the "X" rating in the United States motion picture business means that only films considered as pornographic by many Americans can use it.

From the viewpoint of someone interested in freedom of expression or experience, self-rating is better than state-sponsored censorship but more constraining than no censorship at all. This may be the reason that so many computer game developers choose to avoid the issue at all cost. It is mostly the larger corporations in the computer gaming industry that see that self-regulation is worth supporting as a necessary condition of doing business across the planet.

Summary of Findings

As Table 1 indicates, in the U.S. "doing nothing" is favored with localization considered only if there is an economic advantage to pursing pre- and post-censorship markets. All U.S. and EU computer game providers seem to support their local self-rating schemes when they are not expecting to distribute their products exclusively via the Internet. Any computer game company wishing to do business in Australia, New Zealand or EU countries like Germany must consider localization in order to due business.

Government policy positions relative to censorship in computer gaming have more to do with the individual national majority citizen culture then anything else. If violence is a cultural norm then it won't be a censorship issue. If sexual-orientation and expression is considered a non-moral issue then it also won't be a censorship issue. If freedom of expression is a cultural norm, then alternative ideological positions won't be a censorship issue. Any nation not described in the preceding three sentences will be very interested in state-sponsored censorship resulting in the elimination of self-regulation as an option for the computer industry there (Australian OFLC, 2004) (New Zealand OFLC, 2004). Elsewhere, self-regulation will remain the expected practice when violent or sexual content is to be expressed in a computer game.

Future Study Questions

These findings suggest a few questions that could be the subject of future studies:

- Who is responsible for the multi-user experience in Internet games?
- Is game localization worth the cost to be able to compete in foreign markets?
- Is it possible to effectively censor games without resorting to film criteria?

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Managing Growth in Young Firms: A Matter of Theory or a Question of Practice?

Cinzia dal Zotto

In terms of “liability of newness” new ventures face a greater mortality risk compared to established firms (Stinchcombe 1965, Hannan/Freeman 1984, Fichman/Levinthal 1991). Central to the “liability of newness” hypothesis is the concept of initial assets, or organizational capital. Levinthal (1991) observed that firms fail when they can no longer meet their financial obligations. Consequently, failure can be avoided if the firm has either strong current performance or substantial asset stocks. In this context, assets include not only financial assets, but also market position, distribution systems, manufacturing infrastructure, and technological capabilities. Levinthal refers to this conglomeration of financial and non-financial assets as "organizational capital." We can thus describe young firms as being prone to shortages of real capital assets and/or human capital assets. A lack of these assets when firms are nascent may have fatal consequences (Cooper, Gimeno-Gascon & Woo, 1994; Gaskill et al. 1993, Venkataraman, Van de Ven, Buckeye & Hudson, 1990; Larson & Clute, 1979; McKinlay, 1979). In order to overcome constraints, managers can first try to reduce the degree of novelty associated with a new venture applying risk reduction strategies. As a second step growth strategies should be addressed, as the probability of survival increases with firm growth (Mata & Portugal, 2002).

Different risk reduction and growth strategies have been often analyzed separately in the literature. However, we argue with some other authors (Scholz, 1987; Baird & Meshoulam, 1988; Hamel & Prahalad, 1993; Weir, Kochhar, LeBeau & Edgeley, 2000) that young firms should follow different strategies of risk reduction as well as growth simultaneously. In order to increase their probability of survival new ventures should foster growth introducing growth strategies. In this way young firms can overcome the risks connected with their novelty. Of course, new risks connected with growth must be taken into account and consequently risk reduction strategies are still needed, even if applied for new types of risks. By choosing such a multi-strategy approach young firms have to face the problem of strategy fit. Unfortunately we have to complain a complete lack of theory and models on this field. Therefore the design of some first theoretical fundaments has to be approached in this paper.

The still dominant view in the American as well as European literature is that firms, and especially new firms, should pursue only one consistent strategy (Porter 1980, 1998). The discussions regarding strategic fit have only

considered the alignment of business strategies with organizational mechanisms and external environment (Venkatraman & Camillus, 1984; Venkatraman, 1989; Bogaert, Martens & van Cauwenbergh, 1994). In order to make further progress in explaining new firms' growth on a micro-level perspective, a theoretical framework is required to explore the compatibility of the different risk reduction and growth strategies. Indeed, until now, the compatibility of different strategies pursued simultaneously by one firm—it might be old or new—has not been discussed (Hambrick & Fredrickson 2001). By discussing this overlooked problem this essay aims at showing that, composing a bundle of well coordinated and harmonized strategies, young firms can exploit opportunities better, reduce market and financial risks and therefore foster long-term growth.

First of all the paper will introduce the concept of strategy and describe possible strategy compatibility factors. Then risk reduction as well as growth strategies and their compatibility will be discussed. Two brief case studies will be introduced to give examples. Finally, the compatibility between risk reduction and growth strategies will be debated trying to develop a first attempt of framework for the strategy compatibility analysis. A final discussion and indications for future research will close the paper.

The Concept of Strategy

Although the first principles of strategy developed in China and are summarized in Sun Tzu's classic treatise written at about 360 B.C. (Sun Tzu, 2001), explicit interest in business strategy emerged in the United States during the late 1950s and early 1960s in response to problems of managing large, complex corporations. The post-war period was one of unprecedented stability and growth. As large companies sought efficiency and control of risk through scale-efficient production, mass marketing, vertical integration and large long-term investments in technology, long-term corporate planning based upon medium-term economic and market forecasts became popular. Its key element was the planning and management of growth. By the mid-1970s, however, circumstances had changed. The increased macroeconomic instability discredited elaborated planning systems and firms were forced to adopt more flexible approaches to strategic management. As not only firms' stability but also survival was threatened, interest shifted from issues of diversification and planning toward the need for competitiveness.

As a consequence, over time also the definition given to strategy developed and changed. If in the 1960s Chandler (1962) described strategy as "the determination of the basic long-term goals and objectives of an enterprise, and the adoption of courses of action and allocation of resources necessary for carrying out these goals", in the late 1970s Hofer and Schendel (1978) viewed strategy as "a fundamental pattern of present and planned resource deployments and environmental interactions that indicates how the organization will achieve its objectives". Nowadays, Grant (1995) still interprets strategy as a plan for

deploying resources, which is though aimed at establishing a favorable position in the market. Mintzberg (1998) goes further and claims that strategy needs a number of definitions. He argues that strategy is one of those words that we inevitably define in one way, yet often use in another. As a consequence it turns out that strategy can be seen as a plan, i.e. a direction or course of action into the future, or more "softly" as a pattern, that is as consistency of behavior over time. To some people strategy is a position (Porter, 1996), to others strategy is a perspective, associated with image and sense of direction, namely a vision.

Simply put, a *strategy is an integrated set of decisions and actions made in order to meet the business objectives* and this is how strategy is intended in this paper. The company mission and objectives guide, but stand apart from, strategy (Galbraith & Kazanjian, 1986; Hambrick & Cannella, 1989; Nickols, 2002). Our hypothesis is that if a young firm final objective is to grow, then all strategies adopted by the firm must "serve" the same mission complementing each other and not competing with each other.

If we accept that the fundamental goal of the firm is to earn a return on its capital that exceeds the cost of its capital—that is, to grow, then the firm has two alternatives to reach this goal. First, the firm may locate in an industry where favorable industry conditions result in the industry earning a rate of return above the competitive level. Second, the firm may attain a position of advantage compared to the competitors within an industry that allows it to earn a return that exceeds the one of the industry average. These two sources of advantage define the two basic levels of strategy within an enterprise: corporate strategy and business strategy. The first one defines the scope of the firm in terms of industries and markets in which it competes. These decisions include investment in diversification, vertical integration, acquisitions, and the allocation of resources between the different businesses of the firm. Business strategy is concerned with how the firm competes within a particular industry or market (Grant, 1995) in order to achieve a sustainable competitive advantage. The detailed deployment of resources at the operational level is the concern of functional strategies. They include policies toward production, R&D, marketing, personnel and finance at the industry or product level. In a large firm these three levels of strategies are located within the typical organizational structure and traditionally form a hierarchy implying a top-down approach to strategy formulation (Weir, Kochhar, LeBeau & Edgeley, 2000). However, in reality, the three levels overlap and influence one another. Therefore, in order to optimize coordination and deployment of the available resources within a firm—and to assure the existence and success of the firm—the chosen strategies must be compatible with one another and consistent with each other within each level.

In the entrepreneurial firm, which constitutes the unit of analysis in this paper, it is unlikely to find any organizational separation of business and functional strategies or, in other words, of strategic and operating decisions (Grant 1995). According to a life-cycle perspective we have therefore

categorized strategies in risk reduction—or survival—strategies and growth strategies. Our aim is first to analyze the problem of compatibility between strategies within each category. Then we will consider the consistency between risk reduction strategies and growth strategies. In order to do this in the next section we will introduce some criteria for the measurement of compatibility.

The Compatibility Problem as a Multi-Objective Decision

Introduction

In order to test if two or more strategies are compatible with one another a measurement tool for compatibility is required. One measure of compatibility is the increased company value. In this case firms should choose the combination of strategies which maximizes the company value. Two or more strategies would be considered compatible if their simultaneous application increases the net income of a company. Should the net income on the other hand decrease, the chosen strategies would be seen as incompatible. This simple approach requires that the impact of a strategy on the firm's net income can be identified. Unfortunately an exact measure of the impact of a strategy application on net income is very difficult if not impossible to determine. Moreover it makes more sense to raise the compatibility test from the strategy application to the strategy choice level. Anticipating possible incompatibilities between strategies may facilitate the implementation of the chosen strategies. In this paper we therefore try to work out a second best solution evaluating compatibility between two or more potential strategies indirectly, according to qualitative compatibility factors.

Strategy Compatibility Factors

The implementation of different strategies requires the long-term commitment of material, human and financial resources. The resource demands of one strategy must be consistent with the resource availability of the firm, and therefore with the resource demands of the other strategies, in terms of the amount and the types of resources and capabilities (Penrose, 1959; Barney, 1991; Peteraf, 1993; Grant, 1995). The effective assignment of available resources to the different strategies causes a substantial coordination problem. Low coordination efforts become therefore a strategy compatibility factor. The **coordination efforts** decrease if managers do not have to **compete on scarce or insufficient resources** or if they can draw on the same bundle of resources simultaneously, exploiting natural synergies (Grant, 1995, Scholz, 1997). Following product innovation and acquisition strategies simultaneously may on one hand increase the flexibility of a young firm towards environmental changes, on the other hand it can lead to a lack of focus which threatens the firm's success or even its survival. If the available resources are insufficient either

the implementation of one strategy prevails while the other is aborted or both strategies fail.

Competition between strategic objectives represents a clear factor of strategy incompatibility and can bring a young firm to lose focus in pursuing its general mission/vision. Competing objectives may further cause a dispersion of financial—but not only financial—resources and therefore increase the mortality risk of the firm. As young firms are resource constrained, they should try to increase the resource productivity. One way to leverage resources consists in concentrating them more effectively on key strategic goals (Hamel & Prahalad, 1993). Education and training as internal investment in capabilities and recruitment of experienced employees from outside are an example of competing strategic objectives for a firm in its early stage. As financial resources are not abounding at that stage, focusing on the second objective allows the firm to build human capital and acquire the necessary know-how more quickly. In this way the mortality risk of the firm is minimized, too. At a later stage, when its financial resources have increased and additional specific know how is not immediately needed anymore, the firm can invest in internal personnel development (Scholz, 1987).

Keeping its organizational structure small, a young firm can centralize strategic decisions and facilitate the alignment of different strategies to the same final goal. This automatically reduces the risk of competition between strategic objectives. To maintain a small organizational structure a young company may have to outsource certain activities: this would at the same time reduce competition between managers, responsible for implementing the chosen strategies, for scarce or insufficient resources.

Knowledge is a critical firm-specific intangible resource. Because they are socially complex and more difficult to understand and imitate, intangible resources are more likely to lead to a competitive advantage, and therefore to growth, than are tangible resources (Barney, 1991). Much of a firm's knowledge resides in its human capital and is generated through individual as well as organizational learning (Fahra, Hitt & Ireland, 2000). The problem is that generating knowledge through learning requires time and high investments in education and training while young firms neither have time nor abundant financial resources. In order to make organizational learning compatible with the other strategies, it is therefore critical for young companies to be able to extract knowledge from their daily experience more efficiently than their competitors. Because experience comes at a cost, what differentiates firms over time may be less the quality or depth of their stockpile of experiences than their capacity to draw from and leverage that stockpile (Hamel & Prahalad, 1993).

Time to market is generally essential for young firms that are not well known yet and are trying to build up their own reputation or are marketing a new product (Grant, 1995; Porter, 1999). Therefore **strategy development and implementation time** becomes crucial for a young firm's success. The longer the development and implementation time of a strategy, the longer the

applied resources are not available for the development of another strategy and vice versa. Because of their emerging nature, in young firms strategy is to be considered as a dynamic assembly of short-term objectives which mostly have long-term effects (Bogaert, Martens & van Cauwenbergh, 1994). The commitment of resources at more or less short notice, following short-term objectives according to the situation, allows young firms to be quicker and doesn't prevent them to perceive long-term objectives.

It is very important for a new venture to minimize the know how required for developing and implementing its strategies: young firms do not have a large know how basis and competence development would contrast first of all with financial restrictions but also with the pressure of time to market. For the same reasons also the duration of strategy development and implementation should be minimized through the setting of flexible short-term objectives.

Two or more strategies are compatible if their simultaneous implementation does not negatively affect firm performance. Compatibility cannot be measured on a cardinal scale, but in a nominal or ordinal scale indeed (Scholz, 1987). We can therefore say that compatibility between two or more strategies increases if their combined implementation has a **positive impact on firm performance**. Strategy combinations can develop **positive synergy effects** and consequently increase firm performance. A typical example of such effects is recognizable in the strategic orientation of Escada AG: this company's clothes are successfully sold, its accessories singularly are not; both items together are even more successfully sold then the clothes alone. The accessories production itself would be a failure for Escada, but added to the clothes production is ends up improving the company's performance.

Summing up, strategy compatibility increases when synergies between the different strategies chosen by a young firm are maximized. This means that strategies are following compatible objectives and can share resources reducing in this way coordination efforts, required know-how and duration of their development and implementation. The choice of a strategy combination becomes then a multi-objective decision lead by the existence of synergies between the considered strategies. In the next section we will start the compatibility discussion by analyzing some examples of possible risk reduction strategies that young firms could choose in order to survive and prepare a base for their growth.

Risk Reduction as Short Term Survival "Strategy" for New Ventures

Mortality Risk and Managerial skills

In the context of new ventures mortality risk can be defined as the probability that a firm will become insolvent and be unable to recover from that insolvency before being bankrupted and ceasing operations (Shepherd, Douglas &

Shanley, 2000). Business mortality occurs when an unexpected fall in revenues or an unexpected rise in expenses or both is of such magnitude that the firm becomes insolvent, is unable to attract new debt or equity funding and thus cannot continue to operate. New organizations begin life with a basic expectation that they will survive. Thus they are continually subject to the risk that an unanticipated event or combination of events will force them out of business (Stinchcombe, 1965; Hannan & Freeman, 1984; Singh, et al., 1986). Minimizing risks is therefore a dominant first objective for young firms. Using chances for growth and profit is the second, competing objective.

In order to explain why more young firms failed than did established firms, Stinchcombe introduced the concept of "liability of newness" (Stinchcombe, 1965). It can be argued that the liability of newness is largely dependent on the degree of novelty associated with a new venture. Mortality risk increases with the degree of **novelty in three basic dimensions** of the business development process: **market, technology of production and management**. Novelty to the market concerns the customers' uncertainty about the new venture (Aldrich & Fiol, 1994; Sheperd & Shanley, 1998). Novelty in production means the extent to which the production technology used by the new venture differs from the technologies in which the production team has experience and knowledge (Hatch & Mowery, 1998). Novelty to management concerns the entrepreneurial team's lack of business skills, industry specific information and start-up experience (Cooper, et al., 1994). Mortality risk increases also with the number of dimensions in which the young firm is novel. On the other hand information search and dissemination processes can erode the firm's novelty in each dimension and therefore its mortality risk (Shepherd, Douglas & Shanley, 2000). At the same time new ventures are initially very vulnerable to environmental pressures. Threats to the performance of similar but established firms may threaten the existence of new ventures. New ventures differ in their capabilities for meeting environmental threats and lower their mortality risk. This difference may be explained by the existence of information asymmetry, different managerial capabilities or the lack of them. This will be discussed later in the paper.

Some evolutionary scholars argue that the acquisition of information and knowledge may improve a new organization's chances of adaptation and survival (Parkhe, 1991). Positive results in this direction should stem from passive learning derived from natural interactions among organizations. Organizations do learn from other organizations facing similar circumstances (Davis, 1991; Miner & Haunschild, 1995). This collective learning across organizations constitutes a population-level learning (Miner & Haunschild, 1995) which of course requires time. Mortality risk is therefore very high initially when the young firm has not had the time yet to reduce its degree of novelty in any dimension (Shepherd, Douglas & Shanley, 2000).

Entrepreneurs are continuously making decisions about highly uncertain environments and the young firm's internal structures that in turn modify its

performance outcomes. According to Shepherd, Douglas & Shanley (2000) a new venture manager's decision can impact the liability of newness. If new venture managers learn from past choices about how to perform better in the future, adaptation to changed environmental conditions is indeed facilitated and therefore a new venture's chance of survival improved (Mintzberg, 1990; Hamel & Prahalad, 1993). Overall management skill for young firms constitutes the principal means by which managers can reduce uncertainty around them and establish their enterprises. Essential to the venture survival and growth is although how managers use their skills in the specific situation they face. They show their skills applying risk reduction and growth strategies. Risk reduction strategies reduce the variability of potential cost and revenue outcomes and perhaps also increase the expected net present value of profits. On the other hand, the cost of risk reduction strategies can reduce the firm's margins. This is not a serious problem if growth strategies are simultaneously applied. Applying different strategies simultaneously would require a compatibility proof. Potential risk reduction and growth strategies as well as their compatibility test based on the previously analyzed factors will be discussed in the following sections.

Risk Reduction Strategies

For a new venture attempting to break into a market represents a corporate strategy which confers a higher degree of mortality risk as compared to an established firm broadening its product line (Lambkin & Day, 1989). First of all potential markets have to be identified and then analyzed. According to the market structures and their segments **informative advertising** must be undertaken to disseminate information and overcome the reluctance of potential customers to bear quality risk or switching costs. What makes this activity strategic is when it involves substantial investments of human and financial capital to lay the ground for the success of the venture. An alternative risk reduction strategy may be to seek a **marketing agreement with an existing firm** which would market the product or service either under the established firm's brand name or allow the new venture to operate under the established firm's corporate umbrella more generally (Keller & Aaker, 1994; Dacin & Brown, 1997). This would allow the new venture to reduce its novelty in the market dimension (see previous point) and avoid high marketing costs. On the other hand this would shift a portion of the rights to revenues to the established firm. Also the venture loses the opportunity to build its own brand and reputation capital and, finally, it becomes dependent from the established firm. To reduce dependence the new venture should seek a **joint venture relationship** where for instance an established firm presents a gap in its product line and would therefore be willing to jointly package and market the product. This would give the new venture some reputation without threatening its growth independence. Thus, when applying a risk reduction strategy, not only the effects on the market but also the impact on the other two dimensions must

be taken into account. Entering a joint venture relationship with an established firm may in fact reduce consumer ignorance but could also increase production and management novelty in terms of quality assurance and management of the joint venture relationship (Lechner, 2001).

The set up of a production process for a new venture may need to be made "up front". This can increase the risk of financial failure if expenditures and revenues are incorrectly planned. **Licensing production rights or outsourcing** the manufacture to an established firm usually helps to reduce production novelty and to avoid the major expenses which could lead to financial problems. The problems deriving from this strategy are two: first of all the acquisition of manufacturing skills and experience by the new venture are delayed. Second, increased transaction costs incurred in contracting with or monitoring the licensee may offset the venture's gains in reduced capital outlays (Shane, 1994). If this is the case an alternative strategy consists in building up **production knowledge through education and training programs** as well as **personnel hiring policies**. This strategy is also applicable to reduce management ignorance. Introducing **management information and control systems** helps reduce management novelty too. However this risk reduction strategy usually turns the company's focus internally towards preparing reports and attending efficiency meetings and turn attention away from monitoring, responding to and educating the market, therefore increasing novelty in the market and production dimensions of mortality risk (see previous section).

In general we can say that a risk reduction strategy may have a different effect on each of the novelty dimensions. Some strategies reduce mortality risk by reducing more than one dimension of novelty (see previous section). For example allowing another firm to manufacture and market under license obviates the need for production knowledge, to build customer awareness of the new venture and to manage the production and marketing functions. Also a good entrepreneurial basic education complemented by entrepreneurial experience would directly reduce ignorance by managers and have an indirect impact on the learning rate—lowering mortality risk—in each of the other dimensions. In this way education acts as a catalyst to the learning process. On the other hand a risk reduction strategy applied on one dimension tends to have an undesirable effect on ignorance in one or both of the other dimensions of novelty and therefore mortality risk. It is therefore important to pay attention to the different impacts of risk reduction strategies on all novelty dimensions in order to be flexible and shift strategy if the negative effects overcome the positive ones.

It is important here to stress that learning processes are likely to lower the mortality risk of a new venture. If mortality risk, even if lower, persists also when the firm establishes, then it is desirable that learning processes continue to be enhanced in organizations. This can be fostered introducing a system of incentives for learning (Drumm 2000).

Compatibility of risk reduction strategies

In order to reduce all three dimensions of novelty and therefore mortality risk, different risk reduction strategies should be applied at the same time. We will here consider only the strategies that mostly contribute to reduce the three novelty dimensions. (1) **Informative advertising or marketing agreements** reduce consumer ignorance and therefore *market novelty*. These two strategies may cause problems in assuring production quality as the new venture doesn't directly control marketing activities. In this case (2) **outsourcing or licensing-agreements** could reduce *production novelty* and therefore state production quality. However such agreements make sense only if production is not specific, otherwise the transaction costs of controlling the partner firm would be too high. Another consequence of outsourcing and licensing agreements is that the acquisition of experience and skills is delayed. The introduction of (3) **education and training instruments** together with **management information and control systems**—which foster learning processes—may decline *management novelty*. Relaying only on these instruments in order to reduce newness increases the risk of delaying the new venture response to the market, as learning processes develop with time. But this is not a problem as long as marketing and/or outsourcing agreements with an established firm are made (See Figure 1).

Risk Reduction Strategy / Dimension of Novelty	**Information advertisement/ Marketing agreements**	**Outsourcing/ Licensing**	**Management Information Systems**
Market	Reduction of consumer ignorance	No need to build customer awareness Of the new venture	Responce to the Market deelayed
Production	Risks in quality assurance	Production novelty reduced	Learning processes
Management	Management problems	Acquisition of manufacturing experience and skills delayed	Reduction of Management novelty

Figure 1. Risk Reduction Strategies and Dimensions of Novelty

At this point the question is weather the young firm is able to introduce and manage the implementation of more strategies in order to reduce its novelty in all three dimensions at the same time. The analysis of the above mentioned risk reduction strategies according to the compatibility factors previously developed in the paper brings us to the following considerations. If the application of three risk reduction strategies at the same time is needed, then **coordination efforts** during the implementation phase within the new venture rise. Managing (1) marketing agreements as well as (2) outsourcing or licensing agreements simultaneously and probably with different partners for each of the two strategies may be difficult, especially at a start up when the management team is small and its competencies reduced. This may cause **competition between the two strategies for the scarce human resources** available in the young firm. The **conflict between strategic objectives** shouldn't be considered high, as the final goal is still the main objective directing all risk reduction strategies. The necessary management **know-how required** to develop and implement strategies is not there yet and needs to be built through (3) education and training instruments. Meanwhile marketing and outsourcing agreements help to minimize needed competences. Of course, following two agreement strategies with different partner firms may widen the **duration of development and implementation** of these strategies. It would be desirable for a new venture to have enough competences to be able to reduce novelty at least on one dimension by itself. If the founding team of a young firm has management experience, so being the firm not novel in its management dimension, then the firm needs to apply only two strategies simultaneously. The simultaneous application of two strategies instead of three increases the overall strategy compatibility. A good business plan would foresee the compatibility problem between the needed risk reduction strategies and would therefore include enough capital and human resources. Only in this way the high planning costs needed to develop the plan, which are properly **transaction costs,** could be balanced through reduced controlling costs for the implementation of the chosen strategies (Drumm, 1998).

The importance of applying compatible risk reduction strategies is emphasized through the explanatory case study taken from the media industry that we briefly report here.

The Case of ON24

ON24 is a streaming media delivery platform and distribution network for corporate information. ON24's streaming media business solutions provide private-labeled applications for the financial service, enterprise and healthcare industries: it is about a one-stop web-cast service for live and on-demand corporate communications such as product launches, corporate training, conferences and events, customer and partner testimonials, financial road-shows and equity research.

ON24 was founded by four people in 1998 on the "ashes" of News Direct, a public relations firm. After around six months the founders decided that a news service had to be added to give legitimacy to the public relations' piece of the company. A hybrid came out as ON24, which is based in San Francisco. The company was initially producing more then 20 hours of news a day: at that time there was no apparent end to the public's appetite for financial news. But ON24 did not want to—and could not—compete with giants like CNN. So managers decided to change strategy and turn into a corporate enterprise service company and news was cut down to 5 hours a day. After the bubble burst at the stock market, companies either had no money left or became too skeptical to spend it, so that they cut every expense they considered not essential. Again the strategy was changed and the company went into the web-casting business. Now ON24 is smaller and its revenues come from corporate Web-cast, email marketing (targeted email lists) and advertisements (even if these are very few).

"ON24 lived on the daily business of trying to catch the bubble, chasing tumble weed in the wind" (Peter Shaplen, Vice President News and News Director July 2002). ON24 first thought it was a B2B company, then an ASP (Application Service Provider), then again a solution provider. The business world was so volatile that ON24 was trying to find its place by changing focus continuously. The result was a daily issue instead of a plan. There was no time to do market research, so the management decided to change strategy according to its own intuition. At that point Venture Capital money was flowing cheaply and the company employed up to 150 people. However, the collected money was spent more quickly than expected. Although 100 people were laid off, the company couldn't reach profitability yet.

The main strategy that ON24 followed was to maximize marketing and information on the Internet. Unfortunately only the news side of the business proved to be good: through high talented journalists it experienced growth both in size and range of the content. The unit started with three people and at its height it employed 60 people with offices in New York and London. On the corporate side, however, there was no clarity at all and no focus. Concerning web-casting, the adoption of a technology not universally regarded as essential together with the impact of the economic downturn negatively affects online businesses as well. The consequence for ON24 is that it continues to struggle (Peter Shaplen, Vice President News and News Director July 2002, 2004, Peter van Pruissen, Vice President Finance and Administration July 2002).

On24 has surely reduced market novelty through an extensive marketing activity. The company tried to minimize production novelty too hiring highly qualified journalists. The main mistake was not to have done a comprehensive market exploration and risk analysis at the beginning, when ON24 decided to become a financial news network. What seemed or would have been valuable in the short run—in this case to provide breaking financial news 24 hours a day—wasn't valuable in the long run as there was too much competition in the Internet marketplace. Further, ON24 did not look for a specific capability to be

its competitive advantage. On the contrary, instead of staying focused and exploit its key resources (talented journalists), ON24 changed strategy very rapidly and more than once so that a competitive advantage couldn't even be identified. All this derives from a general lack of business skills, industry specific information and probably start up experience on the management side. Also, geographical expansion didn't help to make imitation costly for competitors: in the internet industry there's no expensive infrastructure needed to enter the business and through the network space and time can be easily bridged.

Basically ON24 wasn't able to reduce novelty in any dimension by itself. In order to reduce market and production novelty the company concentrated on marketing and personnel hiring policies. The simultaneous application of these strategies does not cause high coordination efforts or competition between strategic objectives the two strategies could therefore be compatible if for their implementation managers don't have to compete on scarce resources. Unfortunately the venture capital the firm managed to raise turned out to be insufficient. The lack of market research at the beginning and of strategic focus later on reveals that not even the management know-how was an available internal resource for the company. A lack of the basic risk reduction strategies such as business and organizational control, marketing agreements with other firms to share expenditures, over-funding or accelerated funding schedules together with a compatibility problem between the chosen strategies resulted in the company struggling for survival.

After the successful implementation of some risk reduction strategies, a new venture can start to develop growth strategies as survival strategies for the long run. Some examples of possible growth strategies will be discussed in the next section.

Growth as Long Term Survival Strategy for Young Firms

Growth Strategies in young firms as frame of reference

Although risk reduction strategies are important for new venture survival at early stages, during expansion and later stages young companies should pursue long term strategies in order to foster firm's development and growth. As already discussed, the probability of exit persists but decreases with firm growth (Mata & Portugal, 2002). A business grows when (1) sales revenues increase, which means that more products are manufactured, (2) quality is improved and therefore an increased unit price is justified, (3) the product range is increased, (4) the products functionality and features are improved, (5) a combination of these factors occurs. To keep pace with such demands continuous learning processes and the adoption of specific growth strategies are required.

Currently the most studied growth strategies in the entrepreneurship literature (Gundry & Welsch, 2001; Tonge, Larsen & Ito, 1998; Taylor, 1997) are the following: product and service innovation, market development, internal

investment, business and organizational control, acquisitions, and joint ventures. We will base the compatibility proof which will follow on these growth strategies.

According to a survey, conducted by Tonge, Larsen and Ito in 1998, young companies saw **acquisition** as the most important strategic objective to have provided growth in the past. Beyond acquisition, **product and service innovation** as well as **internal investment in capabilities** were considered crucial, with **business and organizational control** being seen as key strategy between the fastest growing companies included in the survey. Evidently companies had tried to adopt a balanced approach to growth incorporating both acquisition and organic growth strategies. The survey reports further that young firms are seeking not only to position themselves in niche markets but especially to establish strong relationships with their customers individually rather than aggregating them into market groups (Tonge, Larsen & Ito, 1998). In order to meet the customers' needs and therefore to rapidly grow young firms try to provide a quality service and to employ skilled, well-informed and flexible staff through a combination of acquisition strategies in the first place, organic growth strategies and joint ventures for the future. This agrees with our view that, at an early stage, young firms should try to maintain a small organizational structure in order to minimize coordination efforts, competition between strategic objectives and between different strategies on scarce resources.

Most of the times young firms follow more than one strategy: depending on the life-cycle stage in which they are and according to their financial situation, they have to cope with a high mortality risk—and therefore adopt risk reduction strategies—while applying growth strategies in order to increase value and lower the probability of exit. The challenge young firms face is to stay focused on their stated goals and be flexible enough to react to organizational and environmental stressors: this means to follow strategies which are compatible and do not threat one another. In the next section we will discuss the compatibility of some growth strategies according to same the compatibility factors we used to compare risk reduction strategies.

Compatibility of growth strategies

According to the strategy compatibility factors previously identified in the paper, we can say that a strong compatibility could emerge from the simultaneous application of *product innovation and internal investment strategies*. If a lot is invested in terms of financing, capabilities and competence development it is worthy for the young firm to follow also innovation oriented strategies. The newly acquired competencies and capabilities could be used to develop new products or services. This would not imply high **coordination efforts** nor cause **competition between managers on scarce resources** or **between strategic objectives**. Moreover, as competencies would already be available, the **duration of development and implementation** of innovation strategies probably will be minimized. In order not to **compete for scarce**

resources such as available financing and human capital product innovation and acquisition strategies must on the other hand be implemented sequentially. Similarly *acquisition and joint venture strategies* could generate **synergies** as they need the same managerial skills to manage the merger and/or partnering process. *Business and organizational control* strategies should in any case accompany the application of a strategy combination as providing transparency they can help to find the best compatible growth strategies.

Growth strategies have to be applied only after having introduced risk reduction strategies to minimize mortality risk. This is one of the most remarkable findings of our research. The risks deriving from a lack of balance between risk reduction and growth in a young firm are further described in the following case study which, for coherency reasons, we have taken from the media industry too.

The Case of Mondo Media

The company was founded in 1988 by two founders and its main activity was the production of content for other companies. With the '90s the company started to work for the CD-ROM game business (game producers outsourced the graphics and animation work to Mondo Media), so Mondo Media became a real outsourcing provider.

In 1998 the company decided to expand and produce its own products (cartoons, animated advertisements), so that the company would have produced not only the animation but also the writing and would have had its own trademark. To change strategy and turn from an outsourcing provider to an original "film" studio the company looked for venture capital. Venture capital was found and it was used to go towards original content. The product was basically flash animation for the Internet that would have been sold through monthly fees or revenue sharing agreements to web portals and all the dot.com firms that appeared in that period. This activity at the peak—between 1998 and 2000—covered 99% of all the production. Unfortunately the dot.com firms faded away and together with them the market that Mondo Media was hoping to serve with its own products. Now the company is not profitable (while it was before 1998) and in order to survive it has gone back to its old activity of production. The company's client list currently include Electronic Arts/Maxis, THQ, Sierra, Activision, and Viacom (MTV, VH1) (Alex Chu, Director of Business Affairs, July 2002, 2004).

Mondo Media saw an opportunity in the growing Internet Economy to expand its activities and become an original production studio. In ten years time the company succeeded in reducing its market, production as well as management novelty. A good customer base, skilled human resources and a capable management team could minimize its mortality risk and secured its profitability. Concentrating in market development and product innovation Mondo Media found two compatible growth strategies. They did not imply

high coordination costs nor competed on objectives, while the know-how they required was already available. Though the business model was changed abruptly instead of gradually (at the peaks the original production covered 99% of the company's activities), therefore the risk faced was too great. In fact the company was not able to cope once the targeted market faded away. Had Mondo Media chosen a gradual shift continuing its activity as outsourcing provider—and therefore not losing its focus—while producing original content at the same time (that is diversifying its activities), today the company would be exploiting the growing demand for animated advertisements online (The Economist, May 2005) and probably be a profitable company.

Cross- Case Conclusions

If we consider the two case studies presented in this paper we see an example of a business which didn't have a clear and integrated strategy—ON24—and of another business—Mondo Media—which had a sound strategy but was badly influenced by the collapse of the stock market. While ON24 has never been profitable yet and is still struggling without knowing where to go and how, Mondo Media can rely on its old production business, which constitutes a basis to keep the company alive and recover from the losses. Which are the causes of their different development?

Analyzing ON24 we can state that a lack of the basic risk reduction strategies such as business and organizational control, marketing agreements with other firms to share expenditures, over-funding or accelerated funding schedules – together with a compatibility problem between the chosen strategies – can lead the company to struggle for survival. The Mondo Media case reveals further that while applying growth strategies a company should not abandon risk reduction strategies such as business and organizational control or a moderate growth plan. Mondo Media considers itself lucky: having built strong relationships with its customers and profiting from skilled but flexible employees such as freelancers, the company has had the alternative to stay on the market with its "old" production activity. Another important result of this case analysis is to have recognized that risk reduction and growth strategies are linked to the life cycle of a firm but are not limited to a certain stage within it. Considering that growth and mortality risk avoidance are connected to the life cycle of a firm—and not to a precise point in time , new ventures could need to overlap risk reduction and growth strategies. In the next section we therefore analyze the compatibility of both risk reduction and growth strategies within the life cycle of a young firm.

Compatibility between Risk Reduction and Growth Strategies within the Life Cycle of a Young Firm

At the **early stage** new ventures face large investments, that is have high costs and expenses but low revenues and no profits or positive cash flow. In order to reduce mortality risk—that is financial failure—they must first of all assure themselves enough *funds* and try to *accelerate funding schedules*. Second, new ventures must apply risk reduction strategies like *marketing agreements* with other firms, *licensing* of production rights or *outsourcing* manufacturing to established firms. According to the strategy compatibility factors presented in this paper these risk reduction strategies are compatible. Applying only risk reduction strategies though imposes a moderate growth plan, which in turn slows down revenue and cash flows needed to further funding the firm. Growth must therefore be pursued in order to increase a young firm's probability of survival. For this reason a new venture should overlap risk reduction with growth strategies, paying attention to their compatibility.

In order to foster growth without omitting risk reduction tasks new ventures can seek *joint venture relationships* with established and well known firms. This strategy would allow them to share expenses and at the same time to build up reputation and experience (Lechner, 2001). At the early stage young firms should then introduce *business and organizational control systems* in order to be constantly aware of their financial as well as organizational situation and needs. Providing transparency such systems allow a young firm not only to track risks but also to shed light on investment opportunities. Along their growth process new ventures can also apply *education and training measures* to reduce management novelty, and therefore their mortality risk. Increasing managers' as well as employees' capabilities and skills requires though high investments. Education and training are therefore not compatible with the basic risk reduction and growth strategies considered above, which a new venture would implement at an early stage.

An *internal investment in capabilities* is a more suitable strategy for **expansion and later stages** of the firm. In these stages investment returns improve the financial situation of a young firm so that growth strategies like *market development, product and service innovations* as well as *acquisitions* can be addressed simultaneously to risk reduction strategies such as education and training.

As new ventures and young firms have to address both risk reduction and growth, compatibility between optional strategies depends upon the balance that can be established between these two main objectives. A young firm can only seek this balance through strategic experimentation and the derived learning processes, as experience and needed skills are not yet developed. In the early stage is therefore very important to spend on recruiting human resources who can bring in key competences. This measure may moderate growth plans,

as financial resources are contended between more strategies, but the probability of survival and of future growth increases.

Discussion and Conclusions

First of all we can say that, according to our analysis, not only strategies belonging to different categories must be compatible with each other, on the contrary also strategies within the same category must be compatible with each other. Second, from the compatibility analysis that we have conducted emerges that it is not desirable for a new venture to apply growth strategies without foreseeing a previous or simultaneous implementation of risk reduction strategies. As not all strategies are compatible with one another, problems arise when strategies compete on scarce resources or if they pursue competing objectives. Moreover the know-how required to develop and implement the chosen strategies should be minimized because competences are not abounding in young firms. New ventures should therefore include in their business plan a compatibility study for the strategies they would like to pursue. Later on such a study should become a part of the strategic planning of young firms. To know which strategy is compatible with the others gives firms more visibility on the feasibility of desired growing paths and therefore allows them to reduce mortality risk. In this perspective managing your firms is certainly a matter of good theory.

Our compatibility analysis reveals that it makes sense to discuss the problem in relation to start ups. The important result is anyway that, as growth and mortality risk avoidance are connected to the life cycle of a firm, the discussion on compatibility between risk reduction and growth strategies is relevant also when looking at established firms. If the applied growth strategies fail, in order to avoid bankruptcy a firm must consider survival and therefore risk reduction strategies. In this way risk reduction strategies are not only strategies for start up phases but become complementary strategies in expansion stages. If on the contrary growth strategies are successful and therefore the available resources are sufficient, a firm can apply not only complementary but also competing strategies.

An important finding of this paper is that learning processes lower mortality risk. Learning processes allow young firms to shift resources away from risk reduction to sustain growth strategies. As a consequence learning processes can anticipate the break even point from the expansion to a "late" early stage of a young firm (See Figure 2). If learning processes do not take place a young firm cannot develop product or service innovations which constitute fundamental growth strategies. Learning processes can disclose possible synergies between the applied—risk reduction and growth—strategies. These synergies base on shared resources and help to minimize compatibility threatening factors. For instance learning processes help minimize the know-how required to develop and implement both risk reduction and growth strategies. As a consequence their

development and implementation time is reduced too. From this point of view we can say that managing young firms is not only a matter of theory but also a question of experimentation, learning and therefore practice.

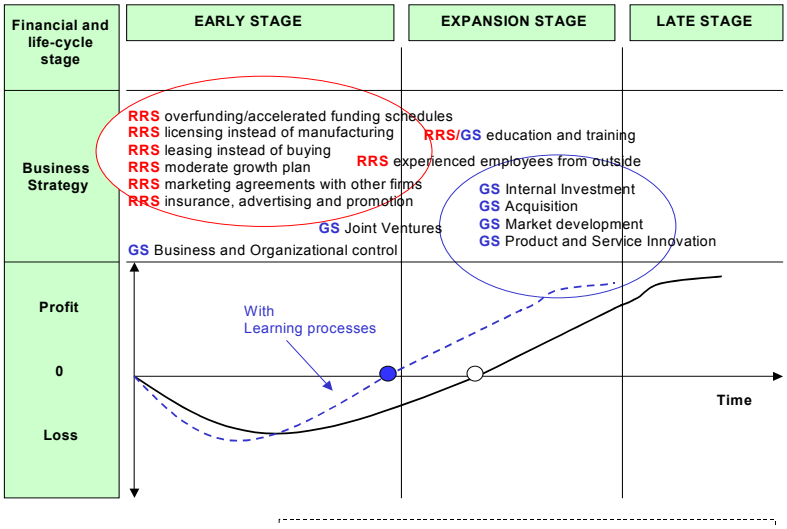

Figure 2. Strategies and Learning Processes in Young Firms

However, the results of this paper are not enough to develop a general theoretical model for strategy compatibility analysis. Some open questions remain for future research and can only be answered empirically. First of all it should be tested, whether start ups make any compatibility considerations when choosing their strategies. Secondly, the impact of such considerations on success has to be elaborated. Third, it should be tested for example whether specific strategies and risks exist in different industries.

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Contributors

Aaron Braaten is a graduate student in economics and research associate with the Alberta Gaming Research Institute and the Alberta Supernet Research Alliance at the University of Alberta, Canada. His current research interests include the economics of media and information, international political economy, nuclear disarmament and peace issues as well as environmental economics and the economics of religion.

Robert C. Burns is a graduate of the master's program in digital media at the University of Washington, Seattle, U.S.A. He has an interest in all aspects of digital media content policy and management.

Jiyin Chen is a lecturer at the Northwest Normal University in China, and research assistant at the Center of Media Economy Research at Shanghai University, China. His research interests concern media economics, media management, digital TV and new media, as well as quantitative analysis in the communication field. He has published ten papers in relevant journals and attended many conferences in the media economics field.

Cinzia Dal Zotto is research director at the Media Management and Transformation Centre and research fellow at Jönköping International Business School, Sweden. Her research interests are in the fields of media management, organization, human resources, and entrepreneurship. She has published a book on the simultaneous development of organizational structures and human resources, several book chapters, and papers which have appeared in the *International Journal of Media Management, Die Betriebswirtschaft*, *Zeitschrift für Organisation*, and *Journal of Media Business Studies*.

Brad DeLong is professor of economics at the University of California at Berkeley. He is also co-editor of the *Journal of Economic Perspectives,* a research associate of the National Bureau of Economic Research, and a visiting scholar at the Federal Reserve Bank of San Francisco. DeLong served in the U.S. government as Deputy Assistant Secretary of the Treasury for Economic Policy from 1993 to 1995. His research interests concern the evolution and functioning of the U.S. and other nations' stock markets, the course and determinants of long-run economic growth, the making of economic policy, the changing nature of the American business cycle, and the history of economic thought. His work has appeared in the *Journal of Economic Perspectives*, *Quarterly Journal of Economics*, *Journal of Political Economy*, *American Economic Review*, *Journal of Portfolio Management*, and *Journal of Economic Literature*.

Tobias Fredberg is an assistant professor in the School of Technology Management and Economics at the Chalmers University of Technology. Gothenburg, Sweden, and a research leader in the FENIX Centre for Innovations in Management. He studies business strategy and innovation, with a special interest in the interaction between the firm and its customers. During most of 2005 he is a visiting research fellow at the Institute for Information, Organization and Management at the Technische Universität München in Munich, Germany.

A. Michael Froomkin is professor of law at the University of Miami School of Law. He joined the University of Miami faculty after working in the London office of the Washington, D.C., firm of Wilmer, Cutler & Pickering. He teaches courses in Internet law, law of electronic commerce, jurisprudence, administrative law, and constitutional law. He also serves on the editorial board of *I/S: A Journal of Law and Policy for the Information Society* and *Information, Communication & Society*. His research interests include administrative law, Internet and in particular cryptography, and E-Commerce. He has published many articles in international journals and various book chapters on these topics.

Marco Gambaro is an associate professor in Media Economics and Industrial Organization at Milan University, Italy. His research interests include competition in communication industries, Italian and international film industry, economics of information and advertising, newspaper organization, antitrust issues vertical integration in television. He works as economic consultant for the main Italian communication companies and for institutions which deal regulation matters on communication issues.

John Hagedoorn is a professor of International Business and Strategy at the Department of Organization and Strategy, Faculty of Economics and Business Administration at Maastricht University. He is also a fellow at MERIT. His research interests include international business, strategic management and applied industrial organization, with a focus on alliances, mergers and acquisitions, and innovation. He published in international journals such as *Academy of Management Journal*, *Academy of Management Review*, *Strategic Management Journal*, *Journal of International Business Studies*, *Research Policy*, *Journal of Management Studies*, *Organization Studies*, *Journal of Media Economics*.

Daeho Kim is an associate professor at the Department of Mass Communication and Information, Inha University, South Korea. Before joining Inha University, he worked at the KISDI (Korea Information Strategy Development Institute) and at the Korean Broadcasting Commission as a senior research fellow. He served as a member of governmental committees, such as the Research Committee on Digital Interactive TV at the Ministry of Information and the Communication and Research Committee on Broadcasting and Telecommunication Law at the Korean Broadcasting Commission. His main interests are convergence of telecommunication and broadcasting, new media policy, and information industry.

Hans v. Kranenburg is an associate professor in Strategy and Industrial Organization at Maastricht University, the Netherlands. His research interests concern industry dynamics, antitrust issues, information and communications industries and (strategic) behavior of firms. He has previously published in international journals like *Journal of International Business Studies*, *Journal of Law and Economics*, *Research Policy*, *International Studies of Management and Organization*, *Journal of Media Economics*, *Managerial and Decision Economics*, *Review of Industrial Organization*, and *International Journal of Industrial Organization*.

T.Y. Lau is director of the master's program in digital media at the University of Washington, Seattle, U.S.A. He was a senior advisor responsible for the launching of a new digital TV network, Indosiar Visual Mandiri, in Indonesia in the 1990s and managed a listed hi-tech company in Hong Kong that has a focus on the Internet, new media and telecom in Greater China and Silicon Valley. He has held professorship and conducted research at Stanford University, UCLA, and Purdue University.

Franz Lehner is professor of Business Computing at the University of Passau, Germany. He previously had a chair for Information Systems at the University of Regensburg, Germany, where he developed and implemented the Virtual University of Regensburg (www-vur.uni-regensburg.de), founded the Centre for Mobility and Information (ZMI) and a competence center for mobile technologies and applications. He has published more than 20 Books and more than 100 articles in national and international journals on various topics in the field of information science and information management. His special fields of interest are E-Learning, Knowledge Management and Mobile Applications.

Susanne Olilla is assistant professor in the School of Technology Management and Economics at the Chalmers University of Technology in Gothenburg, Sweden and a Research Leader within the FENIX Centre for Innovations in Management. Her research is focusing project management, leadership and learning in innovative work.

Giuseppe Pagani is a doctoral student in Business Studies and Communication at the Institute of Management of the University of Lugano, Switzerland, and a teaching assistant in the Institute for Corporate Communication. His research interests are concerned with the analysis of professional service firms' management.

Jaqueline Pennings is a doctoral candidate at the Department of Organization and Strategy, Faculty of Economics and Business Administration at Maastricht University. Her research focuses on the dynamics within the telecommunications industry and the strategic behavior of telecommunications companies. She published in *Journal of Media Economics*.

Benedetta Prario teaches courses in media strategy and text typologies for the Media and Journalism Institute at the University of Lugano, Switzerland. Her research focuses on media strategy, particularly on digital television and its features.

Giuseppe Richeri is dean of the Faculty of Communication Sciences and Director of the Institute for Journalism and Media at the University of Lugano, Switzerland. He serves as a member of the Permanent Commission on Digital Terrestrial Television at the Italian Ministry of Telecommunications and is a consultant for the Italian Communications Guarantee Authority. He is member of the editorial board of several journals such as *Media, Culture and Society*, *Reseaux*, *Communication Strategie*, *Telos*, *Dialogos*, and *Studies in Communication Sciences*. His research interests are concerned with the comparative analysis of European television markets. He has published several books and papers on television.

Fabiana Visentin is a doctoral student in economics and organization studies at Venice International University, Italy. Her research interests are concerned with the demography of corporations and industries.

Xin xun Wu is a professor and director at the Center of Media Economy Research, Shanghai University, China. He serves also as executive director of the Chinese Broadcasting Association of Higher Education, and as an instructor for the Journalism Teaching Committee at the Ministry of Education in China. His research interests concern media economics, media management, theory of broadcasting and digital TV. He won the honor of the Ten Excellent Experts in the Theory of Broadcasting in China last year. He has previously published ten books in media economics and communication as well as many papers in key Journals within the Media and Communication field in China. He has been the editor of International Broadband Network and International Broadcast Information.

Yingzi Xu is a doctoral candidate at University of St.Gallen, Switzerland. Her research interests concern foreign investment in China's media market, board management and leadership, publishing industry, public opinion and electronic commerce. Yingzi has worked as research assistant at the Universities of St. Gallen and Amsterdam, served as executive editor for *EM–The International Journal of Electronic Commerce and Business Media* and *JMM–The International Journal on Media Management.* She has published in *the Journal of Media Business Studies.*

Yvonne Zorzi is an assistant professor in the Institute for Corporate Communication at the University of Lugano, Switzerland. Her academic and research interests concern the management of arts institutions and focus on the implications of management framework introductions.

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