TOWARDS AN INFORMATION SOCIETY?
THE VALUE OF MEDIA PRODUCTION AND CONSUMPTION

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Abstract

Many books and articles have been published on the transition from industrial society into a new form of society – the information society. In this article information society theories are discussed with reference to the development of the Norwegian media and communication sector. Four indicators are examined: the value of information and communication production; employment in media and communication industries; consumption of media and communication goods and services, and the degree to which new technologies appear to alleviate traditional differences between classes and social groups. The overall objective of the article has been to shed light on information society theories using various economic indicators. The analysis demonstrates that changes are taking place within production, employment and consumption of media and communication. However, these changes are neither as fast nor as dramatic as some theories on the transition into the information society predict.

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Introduction [1]

Many a number of books and articles have been published on the transition from industrial society to a new form of society, the post-industrial society (Bell 1973) or the information society (see, e.g., Lyon 1988, Rasmussen 1995, Webster 1995). According to the theories, the transition to the information society is characterised by a number of changes in production and consumption. The key argument is that production of information is gaining more importance relative to other forms of production and that employment is shifting towards information-related activities (Bell 1973, Negroponte 1995). A similar trend, it is argued, can be observed in consumption patterns as the consumption of information goods and services increase as do their economic and social value (Castells 1996). These shifts are in turn seen as leading to profound social changes. One central prediction is that machines and factories are no longer the most important means of production, but rather the competence and skill that workers possess individually. It is also postulated that the opposition between workers and capitalists is weakening or disappearing altogether.

These predictions are controversial and have been met with severe criticism. Webster (1995) identifies five dimensions of the information society – technological, economic, occupational, spatial, and cultural – and criticises the evidence presented within each theoretical strand in turn. His main argument is that the empirical evidence for the transfer to the information society is unconvincing, either because the statistical data are inadequate, the categories too simplistic, or because the definitions of the key concepts: "information" and the "information society" are too vague and mechanical. Within the field of media studies the theories have been criticised from a more political point of view. Colleen Roach (1997) argues that theories of the information society contain a hidden legitimisation of capitalism and the interests of Western media and information industries (as do Bailie and Winseck 1997). Terje Rasmussen (1995) claims that rather than a move away from industrial capitalism we are seeing a process whereby more goods and services are commodified. Peter Golding (1990) maintains that social inequality will not disappear even if new technologies become widespread; because of the uneven distribution of purchasing power we will rather see new cleavages emerging. This latter argument is related to the more recent thesis of the "digital divide." Critics have argued that the dissemination of information technology does not eliminate differences between social groups and classes, but contrary that the differences between the "information haves" and the "information have-nots" are increasing (Servaes 2003, Van Dijk and Hacker 2003).

A final criticism against information society theory is that it is biased towards technological determinism and exaggerating the speed of social change (Garnham 2002, Flichy 1995). Proponents of the information society are regularly propagating the emancipatory capabilities of new communication technologies, claiming that these will revolutionise social and political life. George Gilder's book *Life After Television* (1994) argues, for example, that new technology will increase the freedom of individuals, revitalise culture, extend democracy, and transfer economic power from mass institutions to individuals (Gilder 1994, 185, Negroponte 1995). These are claims that would clearly be difficult substantiate empirically.

The theory of the information society has been gaining ground in a period of

remarkable development in the field of information and communication technology. Technological innovations such as broadband and the Internet have been regarded by national and transnational governments as key vehicles to generate new growth in the economy. This logic has been a major driving force for the liberalisation of communication markets in Europe as well as elsewhere. Both the European Union and many national governments have founded their national communication policies on the belief in the political visions of the information society (Mansell 1993, Davies 1994, Skogerbø 1996, Melody 1997, Storsul 2002, Skogerbø and Storsul 2003).

Although information society theory is heavily criticised within social science, critics of the term remain few outside academia. The term is, as Webster (1995, 4) shows, used without problems by a wide section of opinion. It is interesting to note, as Servaes (2003, 18) does, that in a period where "great narratives" are said to be vanishing, the vision of the information society has clearly become a new such narrative. Thus, the topic of the information society is still controversial, and it remains worthwhile to discuss its predictions in the light of available empirical evidence.

Norway as a Test Case

Norway may provide an interesting test case for discussing predictions about the information society. Norway has a long tradition as an egalitarian society with relatively small differences between classes and groups, and both economic and gender equality increased with the construction of the welfare state after the Second World War. Compared to other rich countries (such as Denmark, Sweden, the Netherlands, Germany and the USA), income is more evenly distributed among Norwegians (*St. meld.* 1998-99, nr. 50). From the late 1970s, Norway embarked on the rapid modernisation of its telecommunications and information infrastructure, thereby providing the basis for the introduction of a range of new media and communications products and services. The development of the Nordic standard for analogue mobile telephony (Nordic Mobile Telephone – NMT), for instance, became the foundation for the early and high penetration of later generations of the digital mobile telephone (GSM) in the Scandinavian countries. The Norwegian emphasis on establishing an advanced information and communication infrastructure also led to early liberalisation of media and technology markets. From the 1980s onwards parts of the telecommunications and broadcasting markets were opened to competition; in 1992 the monopoly on nation-wide broadcasting was abolished and 1998 saw the liberalisation of voice telephony and telecommunications infrastructure (Skogerbø and Storsul 1999; 2003; Syvertsen 2004).

These features provide a good starting point for an empirical analysis of some aspects of the information society theories. The growth of the economy, the construction of a national information infrastructure and the liberalisation of communications markets, had turned Norwegians extensive users of information technology by the turn of the millennium. The penetration of mobile telephony was among the highest in the world (83% in 2002; *Statistics Norway* 2003), and penetration of home computers was equally very high (76% in 2002). In 2003, 55% of the households were hooked up to the Internet whereas altogether 63% of the population had access at home in 2002 *(Norsk mediebarometer* 2002, *IKT i husholdningen,*

2. *kvartal 2003*). Given Norway's relatively egalitarian character, one may expect predictions of the "classless" information society to be particularly valid in this context. One may also expect that the arrival of new information goods and services do not cause new social differences, but rather contribute towards alleviating old ones.

The main purpose of this article is to discuss various aspects of information society theory using economic indicators drawn from Norwegian official statistics. Our aim is not to take on the whole question of whether or not we are entering a new type of society, but to discuss a more limited sub-theme: *To what degree is there evidence that the media and communication sectors are rapidly expanding relative to other sectors, and to what degree are social differences evolving as a result of the expansion of ICTs?* By exploring this sub-theme, we are fully aware that we cannot draw general conclusions about the validity of information society predictions. Empirical evidence from this sector is nevertheless useful when assessing empirical underpinnings of the more general information society arguments.

We have chosen four indicators for the analysis, each corresponding to a certain strand of thought within information society theory. First, we discuss whether the value of information production – defined as the value of production of the media and communication industries – is increasing relative to other forms of production. Second, we explore whether employment in the same industries are rising. Third, our aim is to discuss whether the consumption rates of media and communication products are growing at a faster rate than that of other goods. The fourth aim is to discuss whether we can see a levelling of differences in terms of access to communication goods and services, that is, to what degree we can find evidence that new technologies help to alleviate traditional differences and move society towards a more "class-less" state.

In addition to the general problems of using statistics to discuss general social predictions (Webster 1995), there are specific methodological limitations connected with the data sets used here. The key problem concerns the *definition* of the media and communication industries, which was not a given category in the official statistics. In selecting what to include we have chosen to focus predominately on media and telecommunications industries, but unfortunately the categories vary somewhat between the different types of statistics. The definition of the "media and communication" industries applied here includes (with some variation) traditional print media, telecommunications, postal services, computing, advertising, film and cinema, and radio and television. Banking and finance, travel agencies and other businesses that could easily have been defined as part of the information sector, but have little to do with media and communication, are left out.

The Value of Media and Information Production

Our first indicator concerns *the relative importance of media and communication industries in the national economy*. Following information society predictions, we would expect these industries to expand at the cost of others.[2] We examine the growth of the sector as a whole, as well as variations within the sector. In addition to clarifying which parts are growing and which are stagnating, the latter data may also illuminate regulatory differences. Studies of media policy and regulation have, as a rule, been more concerned with the *costs* of various policy measures

(such as press subsidies or public spending on film or broadcasting), than with the possibility for the state to generate *revenue* from a certain sector. One may assume, however, that large and expanding sectors may be subject to more light-touch regulation than less important sectors, simply because the former plays a more crucial role for the national economy.

The *National Accounts* from Statistics Norway estimates the value of production of different industries back to 1945, but comparable data are available only for the period 1978-1997. Although brief, this period is characterised by major changes in traditional industries as well as in the information and communication sectors. The value of production in different industries is given in percentage of the gross domestic product (GDP). In Table 1 we show the relative economic importance of the sectors that we consider most relevant for our purposes: publishing and newspapers; printing and graphic production; telecommunication; data processing; research and development; advertising; cinema, entertainment and news agencies; and finally, radio and television. These trades were selected because they are directly related to the production of media and information output and services (see above).

Table 1: The Value of Production in Information-Related Sectors, 1978-1997 (in percentage of GDP)

	1978	1982	1987	1992	1997
Publishing and newspapers	1.9	1.7	2.1	1.9	1.9
Printing and graphic production	1	1	1.2	1	0.9
Telecommunications	1.8	2	2.3	2.2	2.3
Data processing	0.4	0.5	1.3	1.1	1.4
Research and development	0.6	0.5	0.5	0.5	0.4
Advertising	0.5	0.6	1.1	0.9	1.2
Cinema and entertainment	1.2	1.1	1.2	1.3	1.2
Radio and TV	0.2	0.2	0.2	0.4	0.5
Total	7.6	7.6	9.9	9.3	9.8

Data sources: National Accounts Statistics 1978, National Accounts Statistics 1982, National Accounts Statistics 1987, National Accounts Statistics 1992, National Accounts Statistics 1997.

The media and communication sector as a whole increased its relative value by 2.2% between 1978 and 1997, and by 1997 it constituted just below 10% of the gross national product. This growth is noteworthy, but not dramatic, and the media and communication sectors remained far smaller than the industrial sector (just below 40% of the gross national product).[3]

Just as noteworthy as the overall growth are the variations *within* the sector. Table 1 sheds light both on differences between sub-sectors, and how economic conjunctures have influenced media and communication activities over the last couple of decades. While telecommunications and data processing grew in relative importance throughout the last decades of the twentieth century, printing and publishing show signs of stagnation. The advertising business shows the same development trajectory as telecommunications and data processing, with a marked growth through the 1980s up to the stock market crash in 1989, followed by recession and relative stagnation until 1992. Since then the advertising sector has expanded markedly, a development related to the expansion of yet another sector –

broadcasting. Radio and television constituted no more than half a per cent of the gross national product in 1997, but this sector has expanded profoundly in relative value since 1978. This is related to the establishment of a commercial radio and television market from the late 1980s onwards (Syvertsen 1997).

To summarise, the last decades of the twentieth century saw the information and media industries gain some significance as contributors to the Norwegian national economy. The industries consequently attracted increased interest as objects of investment for companies with their core activities in traditional industrial production. Examples include the Norwegian industry group Orkla, which is one of three corporations dominating the newspaper sector, the Swedish forestry company Kinnevik that owns shares in several television and radio outlets, and the telecommunications operator Netcom. We have not been able to obtain directly comparable data for the period after 1997, but statistics on turnover for the information and communication industries indicate that the growth slowed down and even reversed just after the turn of the century. This illustrates the impact of the recent devaluation of the so-called "dotcom" and communication industries, and demonstrates that the expansion of the sector is not exempt from the political and economic conjunctures that have influenced the international economy in this period.

The data presented in this section also shed light on differences in media regulation. The least important sector in economic terms – broadcasting – is, in Norway as in most other countries, the most heavily regulated media sector, while large industry sectors such as publishing, printing and later data processing, have been subject to a more light-touch approach (Skogerbø 1996; Syvertsen 2004). This may indicate that the *economic* value of various media industries may be just as important for explaining regulatory differences as the *cultural* and *democratic* value of different media.

Employment

A central assumption of information society theories is that *an increasing proportion of the workforce will be employed in the production and distribution of information*.[4] In this section, we discuss this assumption on the basis of Norwegian Labour Market Statistics. These statistics show the proportion of employees in different industries, but uses somewhat different categories than the *National Accounts* (above). Table 2 presents the relative share of employment in the categories that are most relevant for our purposes: publishing and printing, post and telecommunications, and cultural services. The proportion of the workforce employed in these sectors is presented at four historical conjunctures: 1973, 1983, 1993, and 2003.

Table 2: Percent of Employees in Information-Related Industries in Norway 1973 - 2003

	1973	1983	1993	2003
Publishing and printing	1.6	1.8	1.8	1.4
Posts and telecommunications	2.1	2.8	2.5	1.5
Cultural services	0.9	1.2	1.7	1.9
Total	4.6	5.8	6	4.8

Data sources: Labour Market Statistics 1973, Labour Market Statistics 1983, Labour Market Statistics 1993, and Labour Market Statistics 2003.

Table 2 shows that employment in the three sectors together did not vary very much throughout the period 1973-2003. The first 20 years saw a rise in the workforce employed in the sectors, whereas the last decade represented a decline. More interesting are the shifts within the sector: There has been a steady growth of employment in "cultural services," which comprises employment in media, cultural institutions and sports. At the same time the proportion of the workforce employed in the publishing and printing industries have declined, most likely due to automation of a range of labour operations associated with the introduction of computers.

Within the post and telecommunications sectors, the share of employees increased from 1973 to 1993. This can be explained by the labour-intensive upgrading and modernisation of telecommunications networks that took place in this period, increased emphasis on research and development, and the elimination of waiting lines for telephone services. The decrease in employment from 1993 to 2003 is probably a result of the restructuring of the sector in the form of demonopolisation, rationalisation, and increased automation. Also, these figures may conceal internal shifts. There has probably been a larger reduction of manual workers than demonstrated by the figures and an increase of employees in sales and marketing as the sector have been liberalised and exposed to market mechanisms.

Conclusively, labour market statistics do not demonstrate a rise in the proportion of the workforce employed in media and communication industries corresponding to the expansion of the industries detected in the previous section. The increase of employment in the "cultural services" does not outweigh the decrease in the proportion of employees in telecommunications, publishing, and the graphics industry. The development detected in this section is thus more one of shifts *within* the media and communication industries, and not an increase in the number of employees in industries as a whole.

The Cost of Media Consumption

Our attention now shifts from production and employment to the consumption of media goods and services: *To what degree has the proportion of consumer expenditure on such goods increased throughout the latter half of the twentieth century?* Studies of media consumption are rare within information society analyses. To the degree that consumer data are included, most scholars rely on evidence concerning access and penetration of different communication technologies. For the individual, however, media are not only sources of information and diversion, but also items of expenditure. How much money people choose to spend on media and means of communication is an indicator both of the amount of money available to them and the degree to which they put priority on such commodities.

The Norwegian official survey of consumer expenditure shows that expenditure on media and communication doubled between 1958 and 2002, from 3% to approximately 6% of the household budget. Compared to other key items of expenditure the growth is remarkable: in 1958, the average household spent 23% of their budget on food, whereas the expenditure was 10% in 2002. In 1958, households spent 3% of their budget on media as opposed to 10% in 2002.[5] Although this is a significant development, it can also be observed that the increase in ex-

penditure on media and communication seems to be levelling out – from the late 1970s the percentage of the household budgets used on media and communication has remained constant between 6% and 7%. In the first part of the period investigated here, from 1960 to 1980, households were really re-prioritising their resources from other goods and services towards communication products. This era apparently deserves the label "communication revolution" just as much, if not more, than the present time.

In order to develop the analysis further, we have made a more detailed analysis of the consumption patterns of different types of communication-related goods and services. Our aim is to identify which media and communication goods and services weigh more heavily on the household budget and which weigh less heavily – and how this has developed over time. In order to carry out this analysis we have taken the total amount spent on media and communication at each of the chosen historical conjunctures – what we term the household's "media and communication budget" – and estimated the share spent on each individual form of communication. Table 3 shows how the average household over time distributes its communication budget between five main categories: personal communication (home computers, telephones, postage, etc.), individualised media (recording equipment, records, CDs, etc.), electronic media (radio, TV, video, etc.), cinema visits, and print media (newspapers, books, magazines).

Table 3: Consumer Spending on Media and Personal Communication 1958-1998 (percent of total spending on media & communication products and services; total spending = 100%)

	1958	1967	1979	1988	1998
Print media: Newspapers, books, magazines	39	35	30	27	26
Cinema visits	13	4	2	1	2
Electronic media: Radio, TV, video, licence fees	29	35	36	32	29
Recording equipment, records, CDs etc	1	3	8	5	7
Home computers, telephones, postage	18	23	24	34	36

Data sources: Survey of Consumer Expenditure 1958, Survey of Consumer Expenditure 1967, Survey of Consumer Expenditure 1977-1979, Survey of Consumer Expenditure 1986-1988, Survey of Consumer Expenditure 1996-1998.

Table 3 shows a gradual and considerable shift in the proportion of the communication budget spent on different media. Three particularly interesting observations concern the distribution of consumers' spending. Firstly, the share spent on personal communication and individually composed media consumption, that is, records, CDs, home computers and telephone, has increased considerably over the period. Secondly, although relatively less money is spent on traditional media, these media still represent important costs for the average household. Thirdly, the massive product differentiation within the industry clearly leads to new dents in the budget. The most successful of the new innovations create massive shifts in spending, whereas others hardly make an impact. Below we examine each of these shifts in turn.

Increased Consumer Spending on Personal and Customised Communication

A key feature of modern media and communication production is that information and communication become more personalised. Instead of being dependent on large undifferentiated mass media, an increasing proportion of the average household's communication budget goes towards personal communication. This is an enduring trend throughout the entire 40-year period examined here.

The cost of the telephone has always constituted the most important individual item on the household's communication budget. The proportion of the communication budget spent on the telephone has increased throughout the period despite the fact that the price of a single phone call has fallen. In other words, households put high priority on the telephone, even in periods when the telephone calls were expensive. The decline in the rates for regular telephone services in this period clearly provided incentives for the telecommunications operators and manufacturers to develop a new products and services. New telecommunication services that are expensive to use, such as the mobile phone, started to take a larger slice of the average household's communication budget from the beginning of the 1990s. Telephone equipment, such as telephone sets, fax machines, and modems also became consumer commodities in this period.

Towards the end of the 1980s, the home computer entered the household market. Its share of the communication budget rapidly rose to 6% in the mid-1990s. The breakthrough of the Internet as a commercial medium and the World Wide Web as the user interface led to furthergrowth. Home computers and telecommunications are by far the most important investments in the category of media and ICT for households in this period.

The 1970s saw the breakthrough of stereo sound systems and the 1990s the breakthrough of CD players. Generally, this market shows a steady increase – by the end of 1990s these items weighed just as heavily on the household's communication budget as books.[6]

In general, the proportion of the communication budget spent on personal communication and individually customised media, which we have defined as records, CDs as well as telecommunications and computers, more than doubled between the late 1950s and the turn of the century. This supports the notion that in the information society, consumers are increasingly willing – and able – to pay for individually customised media products. Our data also give the impression that there is a continuing economic growth potential in supplementing the basic mass media with various forms of personal communication (Flichy 1995).

Traditional vs. New: The Case of the Print Media

The analysis of media consumption reveals how new media supplement, but also to a certain extent replace older media, thereby changing the content of terms such as "traditional" and "new media." In the 1950s, "new media" referred to TV-sets and record players, today, the references include home computers, mobile phones, Internet and other forms of communication technologies. Table 4 showed a gradual decrease in the proportion of the communication budget allocated to the older media. The expenditure on cinema visits has sunk from 13% in 1958 to 2% in

1998, and expenditure on newspapers, books and magazines was reduced by about 10% in the same period. The proportion of the communication budget spent on books stabilised in the 1980s, whereas the share of the budget spent on newspapers and magazines declined. The general decline in the proportion of the budget spent on print media as a whole is – among other things – related to the breakthrough of the Internet as a mass medium. The expansion of on-line newspapers implies an obvious continuity in the sense that traditional print media become accessible through new channels.

Product Differentiation in the Media Market: Electronic Media

Product differentiation is a marked feature of all sectors investigated here, but is perhaps most evident in consumer spending on electronic media. Table 4 revealed that expenditure on electronic media constituted around one third of the total communication budget throughout the post-war period. The period from 1958 to 1998 was stable in terms of its relative share of household spending, but the stability masks major shifts between different electronic media. Communications budgets have shifted periodically to accommodate new technological inventions. While radio constituted the biggest expenditure in the 1950s, expenditure on television sets made a considerable dent in the communication budgets of the 1960s and 1970s. The introduction of a more expensive license fee for television instead of the cheaper license fee for radio added to the costs. Towards the end of the 1970s we also see how transition to colour television sets makes television a significant item of expenditure for the average household, while video players and video films, and other equipment such as satellite dishes represent an increased differentiation in the 1980s. In the past decade, a large number of digital communication devices have entered the household consumer market and thereby the households' communications budgets.

Towards a Classless Information Society?

The analysis has demonstrated that consumption of media products has increased relative to other goods and services. Despite the fact that prices of individual media products have decreased in the period examined here, the share of the average household's budget spent on media and communication increases. The industry has shown great creativity in developing new products on which the consummers may spend their money. *To what degree does this development decrease or increase differences between social groups and classes?* Is there evidence that differences are levelling out, or does the data point towards an increased "digital divide" or "communication gap" between households with different purchasing power?

We begin simply with the absolute size of the communication budget in different households. Consumer statistics divide Norwegian households into six different income groups, and the differences in spending between the groups are striking. For instance, households in the highest income group spent more than twice the amount of money on books, newspapers and magazines in 1999 than those in the lowest income group. The pattern was similar with regard to expenses on postage and telephone, although the difference in spending was less.

There was, in other words, considerable disparity between income groups re-

garding access to information goods and services. We can take the analysis one step further and discuss the economic burden that consumption of media commodities place on different households. If we assume that all households need certain media and communication resources in order to be connected and updated, and that they will use the necessary funds in order to obtain these resources, the consumption of media and communication goods and services is bound to place a different financial burden on households with different incomes. The main question here is whether this burden equals out over time, that is, if there is evidence to suggest that the differences between classes and groups are levelling out. Furthermore, it is interesting to see whether such a potential levelling is greater in sectors that enjoy public support and subsidies than in sectors where consumers have to pay for commodities entirely out of their own pockets.

In order to discuss these issues, we have divided Norwegian households into two income categories: "lower income households" (the three lower income groups) and "higher income households" (the three higher income groups).[7] We have further selected two categories of media and communication expenditure: print media (books, newspapers and journals), and personal communication (postage and telephone). Finally, we selected three points in time: 1985, 1994 and 1999.[8] The average consumption figures are calculated within each category.

The analysis reveals that there is no clear evidence of levelling between classes and groups, but neither is there clear evidence that the gap between higher and lower income households is deepening. The most important observation to be drawn from the analysis is that there is a major difference between the print media on the one hand and personal communication on the other. The levelling between classes and groups is greater when it comes to print media, which still receive state subventions (in the form of press support and VAT exemptions). Class differences increase with regard to goods and services produced in the more liberalised telecommunications sector.

Table 4: Percent of Total Household Expenses for Books, Newspapers and Journals in Higher and Lower Income Households in Norway 1985, 1994, and 1999

	1985	1994	1999
Higher income groups	2.2	2	1.8
Lower income groups	2.7	2.1	2
Difference	-0.5	-0.1	-0.2

Data sources: Survey of Consumer Expenditure 1983-1985, Survey of Consumer Expenditure 1992-1994, and Survey of Consumer Expenditure 1997-1999.

Table 4 illustrates how the share of consumer expenditure on books, newspapers, and magazines varies somewhat between higher and lower income households. In 1985, these expenses constituted a heavier burden on the economy of lower-income households than on that of higher-income households. In 1994 the differences had decreased, both groups spending an equal share of their incomes on print media. Towards the end of the 1990s, differences increased slightly again, because the higher income groups spent a lower share of their total consumption on print media, whereas the lower income groups remained on the same level as

1994. Still, the differences between the groups concerning spending on print media were modest in the late 1990s compared to other consumer goods categories, and suggest that spending on print media have been both prioritised and affordable for most households.

Table 5: Percent of Total Household Expenses for Postage and Telephony in Higher and Lower Income Households in Norway in 1985, 1994, and 1999

	1985	1994	1999
Higher income groups	2.2	1.1	1.7
Lower income groups	2.5	2.5	2.2
Difference	-0.3	-1.4	-0.5

Data sources: Survey of Consumer Expenditure 1983-1985, Survey of Consumer Expenditure 1992-1994, and Survey of Consumer Expenditure 1997-1999.

Expenditure on postage and telephony gives a somewhat different picture. From 1985 to 1994, the differences between the groups increased substantially: postage and telephone expenses (the cost of postage is negligible compared to the cost of telephone within this category) became a markedly lighter burden in higher income households, whereas the economic burden on the lower income households remained the same. After 1994, the opposite development can be observed. In higher income households, the share of expenses on postage and telephony increases, while decreasing in the lower income level groups. In sum, the differences in consumption patterns between the two income categories were bigger during the 1990s than in the first half of the 1980s, that is, the differences between income groups became more pronounced over time.

The analysis has so far demonstrated that there is no clear evidence of levelling of social differences. A third indicator that can illuminate this question is the availability of media equipment in different households. The distribution of equipment varies substantially with income level: the richer people are, the greater the diversity of media equipment in the household (Table 6).

Table 6. Percent of Different Income Level Households with Three Types of Media Equipment (second quarter 2003)

Media equipment	Income level				
	- 200,000 NOK	200-399,000 NOK	400-599,000 NOK	600,000 NOK	Not given
TV set	91	96	99	99	93
DVD	28	39	50	64	28
Home computer	46	59	83	95	57

Data Source: IKT i husholdningene 2003.

Whereas television in 2003 was a typically "democratic" medium, in the sense that even in the lowest income groups more than 91% of the households owned a television set, differences between higher and lower income households were markedly greater once DVD players and home computers were introduced. The latter media types are newer, and we still do not know whether they will obtain an

even distribution in the population. The penetration pattern for home computers is somewhat different from that of other media equipment in that more people in the lower income group own a computer. This is probably because students and pupils belong to this income group. Pupils and students are the groups with the highest penetration of home computers[9] and they use electronic media such as the Internet more than any other groups.[10] The rapid expansion of Internet access in the past few years illustrates this development: in 2002, 63% of the population had access to the Internet at home, against 36% in 1999, 22% in 1998 and 13% in 1997.[11]

Concluding Remarks

The overall objective of this article has been to shed light on information society theories by various economic indicators. We have concentrated on a sub-theme of information society theory – namely to what degree the media and communication sectors are expanding relative to other industrial sectors. Our initial argument was that Norway was a suitable test case for discussing predictions of information society theories, since the Norwegian population by all measures is relatively advanced in its usage of media and information. Four areas were investigated: the value of the media and communication industries, employment in the same industries, consumption of media and communication products and whether we can see a levelling of differences in terms of access to communication goods and services.

The analyses have strengthened the impression that changes are taking place within production, employment and consumption of media and communication, but changes are neither fast nor dramatic. The media and communication industries represent a growing sector, but with its 10% of GDP it is still limited compared to traditional production industries. There is no clear evidence that employment in media and communication industries are rising, rather what seems to be occurring are shifts within the sector. Household expenditure on media and communication has increased more than consumption generally, but the increase was most prominent in the 1960s and 1970s. Differences between classes and groups have not been levelling out; on the contrary, there is evidence that some differences between social groups have increased.

These conclusions indicate that the issues involved in empirical analyses of the information society are complex, and that it is difficult to find hard statistical evidence that major shifts are occurring. Webster makes the same point, and presents a thorough criticism of previous statistical studies in this field. He points out that distinguishing between for example an "information worker" and a "non-information worker" is fraught with difficulties, and that it is almost impossible to define "the information industry" precisely. He also asks rhetorical questions such as "when does a society cease being 'industrial' and enter into the 'information' category" (Webster 1995, 9) and "at which point on the economic graph does one enter an information society?" (p. 13).

Although Webster clearly has a point, he might be somewhat overstating his case. Clearly, the term "information society" is not a precise analytical concept but neither are concepts such as "the industrial society" or "the agrarian society." Indeed, as Webster and others (Bovens, undated, 5) point out, all societies are infor-

mation societies in a certain sense, since all forms of social organisation and interaction involve the processing of information. Thus, the main test is not whether concepts such as "the information society" can be proved to be 100% empirically valid, but whether or not they are useful to describe at least some of the current trends. The terms "information society" and "information economy" may well be "vague mantras" (Garnham 2002, 4), but even vague mantras have a purpose of ordering disparate facts into larger and more meaningful categories.

Our analysis in has demonstrated that shifts are occurring regarding the value of the media and communication sectors for society. Shifts are also occurring in the value placed on different media by consumers. A key argument of this article has been that economic differences still matter. Our analysis to some degree strengthens the "digital divide" hypothesis: the assertion that the advent of information technology increases the gap between "information haves" and "information have-nots." The enormous product differentiation over the last decades presents households with a series of hard choices: for each new gadget to be bought something else will be left out. It is important to note that new media and communication devices only to a very small extent replace older ones: while many would feel that they need a computer, a video camera and a mobile telephone, they would not feel that these could replace newspapers, magazines or a television set. For high-income households each new product presents yet another opportunity to enhance the quality of life, whereas low-income households have to weigh each new purchase (Van Dijk and Hacker 2003, 321).

This also implies that the elimination of the "digital divide" – for example in the sense that everyone gets access to a computer – could well lead to an increase in more traditional communication gaps. More equal access to electronic media could mean less equal access to magazines, books and newspapers.

Realising that there are many people who, for different reasons, do not want new communications products and services, the continued presence of economic differences nevertheless points to the need for policy measures. If one is to realise an information society with less social inequality, policy measures will be necessary to distribute basic information resources more evenly among the populace. It is also clear that media policy measures alone may not be sufficient to eliminate the social differences detected in this article. Since these differences are of an economic nature, there is still a need for traditional redistributive welfare state policies.

Notes:

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2. Measuring the proportion of GDP to come from different sectors is a key element in what Webster terms the economic strand of information society theory. The key study in this field is Fritz Machlup's *The Production and Distribution of Knowledge in the United States* (1962), which attempted to ascribe economic value to different industrial sectors and traced their contribution to the GDP (Webster 1995, 11).

3. The primary sector constituted only a little less than 3% of GDP.

4. Measuring the proportion of the workforce employed in various sectors is the key variable in Daniel Bell's analysis of the post-industrial society (1973). Webster (1995) terms this the "occupational" strand of information society thinking.

5. Data sources: Survey of Consumer Expenditure 1958, Survey of Consumer Expenditure 1967, Survey of Consumer Expenditure 1977-1979, Survey of Consumer Expenditure 1986-1988, Survey of Consumer Expenditure 1996-1998, Survey of Consumer Expenditure 2000-2002

6. These figures exclude schoolbooks.

7. The data originate in the Surveys on Consumer Expenditure that divides Norwegian households into six income groups.

8. The consumer surveys are in carried out over a three-year period, for example 1997-1999. We have chosen to present the surveys by the last year in the three-year period.

9. http://www.ssb.no/emner/10/03/ikthus/tab-2003-11-06-01.html.

10. http://www.ssb.no/emner/10/03/ikthus/tab-2003-11-06-03.html.

11. http://www.ssb.no/emner/10/03/ikthus/tab-2003-11-06-01.html.

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