Telecommunications – Between Politics and Market Forces
Universal Service Strategies in Norway, Denmark and Ireland

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Introduction
This paper presents some empirical findings from a research project on telecommunications policy in Norway, Denmark and Ireland. The point of departure for the study is that access to telecommunication services is an increasingly important resource for citizens to access information and participate in society. At the same time, telecommunications have been liberalised. Hence, a contemporary political challenge is how to ensure universal access to important services in liberalised markets. This paper will focus on what regulatory measures Norway, Denmark and Ireland have chosen in order to promote universal provision of basic services, and how these have been implemented.

The three states provide an interesting comparison as they are all small European states with different relations to the European Union (EU) and different traditions for political interference in the economy. When politicians in these states formulate their telecommunications policies, they must act within an international framework with common EU-regulations and global markets which constrain their degrees of freedom for policy-making. Some argue that such constraints are especially important in small states that are highly dependent on world markets (Katzenstein 1985). Thus, this situation may lead to a political convergence where national differences diminish. However, the states’ starting points differ and there are significant variations between them regarding their national characteristics, institutional legacy and political cultures. Although all states are subject to the EU regulations, their relation to the EU varies as Ireland and Denmark are EU members, whereas Norway is a non-member, but part of the EU single market through the agreement on the European Economic Area (EEA-agreement). Further, the institutionalisation of the states’ welfare systems in Norway and Denmark had a stronger emphasis on redistribution than the Irish (Esping-Andersen 1990), reflecting that egalitarian values have been more important in the political cultures in the Scandinavian states than in Ireland. Further, Ireland have a long history as the poor brother of Europe, whereas Norway and Denmark are among the richer states and also had a higher telephone penetration than Ireland. Another question for investigation is therefore if the international constraints lead to a convergence of policies, or if national differences still prevail?
Universal Service Regulations
In Norway, Denmark and Ireland, the political majorities concluded that interference in the liberalised telecommunications market was necessary in order to ensure distributive justice, and they all decided on some kind of universal service regulations. However, as these three states were all members of the European Single Market, their policies also had to comply with the EU regulatory framework.

The EU Framework for Universal Services
The European Union formulated a detailed policy for universal services when the telecommunications markets were fully liberalised. In this framework the Directive on Voice Telephony defined universal services as:

[...] a defined minimum set of services of specified quality which is available to all users independent of their geographical location and, in the light of specific national conditions, at an affordable price.\(^1\)

The services which should be universally available were defined as, the provision of network connections and access to telephone service including national and international calls, speech, facsimile and/or data communications, directory services, public pay phones, and specific measures for disabled users and users with special social needs. The member states could designate one or more operators to be responsible for the provision of these services so that the whole of their territory was covered. To ensure that these services were actually available to citizens, the EU stated that they had to be affordable to the citizens. To achieve this, the member states could “implement price caps of geographical averaging or other similar schemes for some or all of the specified services until such time as competition provides effective price control.”\(^2\)

If universal service obligations represented an unfair burden on an organisation, the Interconnection Directive\(^3\) stated that the member states could establish a mechanism for sharing the net cost of the universal service obligation with other organisations

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3 97/33/EC Directive on interconnection in telecommunications with regard to ensuring universal service and interoperability through application of Open Network Provision (Directive on Interconnection).
operating public telecommunications networks and/or publicly available voice
telephony services. This mechanism could be in the form of an independent fund,
called a USO-fund, or as a supplementary charge added to the interconnection charge.

Although the EU regulatory regime on universal services was detailed, it gave the
member states certain degrees of freedom as to where to set the level of affordability,
whether or not to introduce price caps, and over the implementation of a financing
mechanism. Further, the states could decide to extend the scope of universal services
beyond the EU-defined minimum. However, the funding mechanism could only be
used to finance universal provision of the services the EU had defined. This meant
that if a state decided to impose obligations on a company to provide ISDN or broad-
band services nation-wide with or without a maximum price, the extra cost of this
could not be shared between all the market players, but would have to be met by the
company itself.

Norwegian Universal Service Regulations
Before liberalisation, Norwegian Telecom (later Telenor) enjoyed monopoly
privileges and was in return obliged to provide the whole country with
telecommunications services. Further, it was an important principle that
telecommunication services should be equally charged regardless of where people
lived, i.e. between rural and urban areas. Equality in prices and service provision was
an important principle, and entering the 1990s, it was stated that the main objective in
Norwegian telecommunications policy was to ensure “nation-wide provision of
services at equal prices in all parts of the country”.4 When the market was liberalised,
this principle of complete equality could no longer be pursued, but new distributive
measures were established.

In the Norwegian universal service regulations imposed at the time of liberalisation,
the scope of universal services was similar to that of the EU.5 It was decided that
voice telephony, including special services for the disabled, should be available to all
households, businesses and enterprises, whereas leased lines and data

4 St. meld nr 8 (1991-92) Om televerksemnda i Noreg og om fullmakter på statsbudsjettet for 1992
vedkomande telekommunikasjoner. My translation.
5 The following description of universal services originates from St. prp nr 70 (1995-96) Om avvikling
av resterende eneretter i telesektoren.
communications should be available for all businesses and enterprises. Further, all customers should be offered connections to digital networks, pay phones should be widely available, and directory services should be available for all.

The obligation to provide these services universally was imposed on the state company Telenor. The company was the dominant in the market, and already provided services nation-wide. Although the principle of equal prices was abandoned, the Labour Government was concerned that the market might lead to unwanted differences in price levels. They therefore stressed that “To counteract possible unfair regional differences, the Government will introduce maximum prices.” These maximum prices, or price caps, were imposed on voice telephony services and on leased lines and were supposed to ensure decreasing prices on voice telephony, and to avoid rising prices on leased lines. As most European states, Norway did not establish a financing mechanism to compensate for the extra costs the universal services obligations implied mechanism. The reason was simply that as Telenor was the dominant actor in the telecommunications market, such an arrangement would basically mean Telenor paying for its own expenses.

In two respects, these Norwegian regulations differed from the EU regime. One was that all customers should be offered connection to a digital network, and the second was the maximum price on leased lines. Nevertheless these provisions had little impact on the telecommunications market. The digitisation of the telecommunications network was almost finalised at the time the legislation was decided, and thereby all customers had this offer regardless of regulation. The prices of leased lines also decreased beyond the price caps throughout the period. Hence, in effect, and definitely for the service provision to households, Norwegian regulations of universal services were in accordance with the EU-minimum, leaving both ISDN prices, and the supply and prices of more advanced services to be set by the market. This was striking considering the strong focus on equal prices and supply during the monopoly era. The Labour Government, however, stated that the scope of universal services should be reviewed regularly:

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6 St prp nr 70 (1995-96) Om avvikling av resterende eneretter i telesektoren. My translation.
The scope of the services that shall be provided nation-wide must reflect the development and which services are considered universal in the sense that the majority of the customers use them and their significance for participation in society. The utility of including new services must be balanced against the increased expenses this would impose on the actors and thereby the consumers. The scope should be reviewed regularly. 7

Hence, the Government was open to extending the scope of universal service regulations, and the argument used indicated that the scope might be extended when new services became significant for participation in society. Yet, this was to be balanced against the cost, and until 2002 no governments have proposed such an extension.

**Danish Universal Service Regulations**

The Danish starting point was different from the Norwegian one as the telecommunications sector until 1990 was organised with regional companies in addition to the state company. This structure implied that in Denmark there were considerable differences between the pricing structures of the regional companies. However, the state head measures to regulate the licensed regional companies, including their pricing policies (Thstrup 1992:320). When the regional companies in 1990 were united into one corporation, Tele Danmark, it was specified that the Minister could impose obligations and supervise the company's compliance with them. These obligations could include conditions for service provision and price levels and they were imposed on the company in return for its monopoly rights. 8

However, these obligations on the company were rather vague, and as the liberalisation process evolved, the need to formulate more specific conditions for universal service regulation became evident. When the Danish Parliament adopted the acts which fully liberalised the telecommunications sector, they also adopted a separate Act on Universal Services. 9 The Act defined the scope of universal services to be that all users should have the opportunity to access voice telephony and ISDN services. Leased lines should be provided to industry, and special services to users with disabilities. Pay phones and directory services were also part of the obligation. In order to ensure affordability of these services, price cap regulations were introduced. The price cap arrangements implied that a maximum price was set on these services

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7 St prp nr 70 (1995-96) *Om avvikling av resterende eneretter i telesektoren*. My translation.

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and was supposed to ensure decreasing prices in all areas. There could be differences in price levels, but Tele Danmark could not offer services at prices above the price cap.

As we can see, the approaches in Norway and Denmark were rather similar. What differed was the Danish inclusion of ISDN as a universal service which should also be price regulated. By introducing price cap regulations on ISDN, Denmark not only went further than Norway, but also beyond the EU which had not defined ISDN as a basic service regarding whose obligations could be financed through a shared financing mechanism. This relation to the EU framework was discussed explicitly by the Danish Government, which stated that it had worked within the EU to gain acceptance for extending the scope of which services could be financed through a shared mechanism, but did not succeed. Nevertheless, Denmark used the degrees of freedom within the EU framework and chose a broader scope of universal services than the EU proposed. However, this implied that the extra costs which Tele Danmark might incur because of the price cap on ISDN services were imposed on the company without compensation. Furthermore, a joint financing mechanism for the universal provision of the other services was not implemented in Denmark for the same reasons as in Norway, because it would entail Tele Danmark contributing to its own service provision.

Irish Universal Service Regulations

In the monopoly era in Ireland, the obligation on Telecom Eireann to provide telecommunication services was weaker than in Norway and Denmark. The Telecommunications Services Act of 1983 stated that the company should:

meet the industrial, commercial, social and household needs of the State for comprehensive and efficient telecommunications services and, so far as the company considers reasonably practicable, to satisfy all reasonable demands for such services throughout the State.¹¹

The focus here on what the company considered practicable signified a different emphasis on the goal to ensure equal provision of services in all parts of the state than in the Scandinavian countries. The penetration rate was also much lower in Ireland,

¹¹ Act No 24 of 1983, Postal and telecommunications services Act, Section 14.
and in 1984 less that half of the households had a telephone (Flynn 1998:259). Prices were, however, equal in all parts of the country.

In 1996, the liberalisation of telecommunications was prepared through the adoption of a new Telecommunications Act. This act complemented the 1984 Act, and the obligation imposed on Telecom Eireann was not changed. The Act did, however, make provisions for price regulations as it enabled the Minister to introduce maximum prices through a price cap on a basket of services. With regard to the fact that the market was not fully liberalised until December 1998, price cap regulation was introduced relatively early in Ireland. This may be explained with reference to three factors. The first is that Telecom Eireann was partly privatised in 1996 and the Government needed to find new means of controlling prices. Secondly, there was considerable public discontent over the prices, especially after a steep increase in 1993. Thirdly, the price cap regulations in Ireland were not related to universal service provision as such, but to the lack of competition. The Act stated that:

An order under this section shall not be made unless the Minister is of the opinion that - (a) there is no competition in the market for the supply of the telecommunications services concerned, or (b) the provider of the telecommunications services concerned holds a dominant position in the market for the supply of those services.\(^{12}\)

The services which complied with these criteria were subject to regular review. In 1996, price cap regulation was specified to cover a relatively broad basket of services including regular telephony services, ISDN connections, directory services and payphone calls.\(^ {13}\) At this time, these services were monopoly services, and the price-cap regulation was a tool to avoid Telecom Eireann overpricing the services. Hence, this was not directly comparable to the Danish maximum price on ISDN, which was implemented in a liberalised market. However, after liberalisation Ireland retained the price cap also on ISDN services. Consequently, the Irish regime started to resemble the Danish one. However, the arguments were different as the Irish price cap was grounded on the lack of competition in the ISDN market and not on the concern for distributive justice.


\(^{13}\) ODTR 99/19. *Review of the Price Cap on Telecom Eireann.*
Significant Differences
The analysis presented here has shown that on a more detailed level of universal service regulations, there were significant differences in how the states developed strategies for solving the tension between liberalised markets and distributive justice. The main differences were that Norway and Denmark had a broader scope of universal service regulations than Ireland, and that Ireland and Denmark imposed price caps on ISDN services, whereas Norway did not. At first glance, these differences were unexpected. We could have expected that the EU framework, which was also detailed on the universal service regulations, would have eliminated differences to a greater degree. But, as we have also seen, the framework gave the states certain degrees of freedom which the three states used to a different degree.

Regarding the difference in the scope of universal services, Norway and Denmark chose a somewhat broader scope than Ireland as the two Scandinavian states also included leased lines and digital networks or ISDN as services which should be provided universally, whereas Ireland chose a more narrow approach. These differences may be explained with reference to continued differences between the states’ welfare state legacies and political cultures, as redistribution of resources and egalitarian values were traditionally more important in the two Scandinavian states than in Ireland. Moreover, the level of network development varied between the states, the Irish being less developed than the networks of the two other states. Consequently, the narrower scope of the Irish regulations may be an expression for the priority of ensuring universal provision of telephony, which was still not accomplished by the mid-1990s.

The differences between the states’ price cap regulations, however, followed a different pattern. Denmark and Ireland chose to price cap, not only the services defined as basic by the EU, but also ISDN, whereas Norway did not. It was surprising that the differences followed this pattern, and that Norway, which was the least integrated state in the EU with a strong political culture for egalitarian solutions, did not choose as extensive regulations as those adopted by Denmark. Furthermore, Ireland, with the least egalitarian political culture, could have been expected to have the least extensive regulations. However, when we take a closer look, the fact that Norway chose to regulate in closer accordance with the EU framework than Denmark
and Ireland, may not be so paradoxical after all. One reason for this is that Denmark and Ireland had many years of experience with identifying national approaches within the EU framework, in promoting their own solutions to EU initiatives, and in identifying the degrees of freedom they had and manoeuvre within these in accordance with their national interests. In Norway the situation was different. One important factor was that the EU was highly controversial in Norwegian politics after two referendums in which the majority of the votes were against joining the EU. As a consequence, the EEA-agreement was regarded as a national compromise which few parties wanted to question. In a previous analysis, together with Eli Skogerbø, I argued that:

the European issue is capable of revitalizing most former political front lines in Norwegian politics and splitting the major parties. There has been pressure, then, to keep the level of conflict as low as possible by selecting options that could be presented as fait-accomplis, namely, those that were adopted by the EU (Skogerbø and Storsul 2000:141).

Hence, the Norwegian strict compliance with the EU may be explained with reference to the controversial role of the EU in Norwegian politics. The desire of most politicians to avoid conflict around EU issues became an incentive to accept EU guidelines and implement them directly into Norwegian politics.

When Ireland chose a broader scope than the EU the reason was the lack of competition in the ISDN market. The price regulations were imposed in a situation of monopoly regulations and the price caps were supposed to prevent the company from exploiting the situation in relation to its customers. When the markets were liberalised, the company still held a de facto monopoly and regulations were prolonged. For Denmark, the price regulation of ISDN services may be explained with reference to the fact that there was already a tradition in the Danish telecommunication system for market regulation, as the regional companies had been regulated to avoid abuse of monopoly power. Hence, the institutional legacy made price regulations a more obvious alternative in Denmark.

The above explanations indicate how differences in the relation to the EU, as well as different institutional legacies, may contribute to explaining the three states’ different approaches to universal service regulations. An additional explanation for the Danish
regulations may be more pragmatic, and this is that in Denmark, the geography of the state, and the fact that the networks were already digitised, made universal provision of ISDN-services a less expensive challenge than it would have been in states like mountainous Norway.

**Universal Service Implementation**
The above review of the universal service regulations shows that in spite of a detailed EU framework, national characteristics and institutional legacy was still important for how the states chose to handle the challenge of ensuring distributive justice in liberalised markets. Nevertheless, in all three states the universal service regulations were the basic regulatory instrument for ensuring that all citizens would have access to basic services in liberalised markets. However, without effective implementation, the aim to ensure universal access to important services will basically be of symbolic value. This section compares the mechanisms the different states employed in their implementation of universal services regulations.

**Norwegian Universal Service Implementation**
In Norway, universal service obligations were imposed on Telenor through the company’s licence\(^\text{14}\) issued by the Ministry of Transport and Communications. The license stated that Telenor had an obligation to provide public telecommunications network and telephone services to all locations in the state with round the year residents or businesses. This obligation could be fulfilled with different technological solutions, but it was explicitly mentioned that if Telenor chose to use wireless access, the cost for the customer must not exceed the joint costs for subscription and similar services in the fixed network.

The Norwegian Post and Telecommunications Authority (PT) was responsible for monitoring compliance with the license requirements. However, the PT not investigate Telenor’s compliance with this through separate inquiries:

> Telenor’s compliance with the service provision is not usually investigated separately. We get information about this primarily through complaints. But the complaints are few. Generally, Telenor recognises and meets its obligations. There have been some individual cases where the provision of fixed lines would have been extremely expensive. In these cases the PT has

\(^{14}\) *Konsesjon for Telenor AS*. The analysed version was set by the Ministry 2 March 1999 and changed 2 August 2001.
accepted radio or mobile connections, as long as quality and price is the same (Interview with Willy Jensen and Jan Graff, PT, 27 February 2002).

Hence, the information the PT had on compliance with this obligation was not gathered in any systematic way, but depended on individual customers’ complaints. The PT assumed that as long as there were not many complaints, Telenor met its requirements.

The license also stated that the Ministry could decide on price caps. In Norway, price caps were imposed through letters from the Ministry to the universal service provider Telenor stating by how much prices should decrease in the years the price cap applied. These price reductions were calculated in percent related to the consumption price index (CPI) to ensure falling prices in real terms. For example, in the letter which set the price cap for 1998-2000, the prices on Telenor’s services on voice telephony and leased lines should be reduced by at least 3% in relation to the CPI (CPI-3%). This implied that if the average development of prices on consumption products and services was a 4% increase, telecommunications prices could only increase by 1%.

The first price-cap letter from the Ministry formulated the price cap arrangements so that the price cap applied to a basket of services with both subscription rates and charges for national and international calls as well as calls from fixed networks to mobile telephones. It was the total price of the basket that had price cap restrictions. Hence, the price cap allowed increased prices for individual products if the price of the total basket decreased in accordance with the price cap. The arrangement therefore allowed for price rebalancing, which was an important reform in most European states. Generally, this implied that subscription charges increased whereas the charges for the use of telecommunications services decreased.

It was the Ministry who imposed these price caps on Telenor, and it was the Ministry who was responsible for monitoring compliance with the requirements. This was done by requesting annual reports from Telenor on the company’s compliance with the

16 Letter from the Ministry to Telenor of 26.06.1998.
price cap. In these reports, Telenor calculated the changes in the prices, and even if the Ministry did not control or sanction this report in any formal sense, they studied the report closely and, as a representative of the Ministry stated:

When we study the numbers from Telenor, it is evident that the prices are in compliance with the stated objectives (Interview with Jørn Ringlund, Ministry of Transport and Communication, 27 February 2002).

Consequently, even if the sanctioning was not formal, there was an element of control in this process. This division of tasks between the regulatory authority PT, and the Ministry indicates that the Norwegian Ministry played an active role in the implementation of telecommunications regulations. The Ministry took part not only in formulating the rules, but also in imposing price caps and in monitoring Telenor’s compliance with these criteria. The general monitoring of the market was, however, PT’s responsibility, but it seemed that the main focus of the PT was on the conditions for competition in the market, and not on specific universal service obligations.

Danish Universal Service Implementation
The Danish implementation of the universal service obligations differed from the Norwegian approach. In Denmark there were no license requirement for operators in the fixed network. Consequently, the Danish universal service policy was implemented through other legal mechanisms such as acts and executive orders.

Two acts have been relevant for the regulations of universal services in Denmark. The first was the 1996 Act on Universal Services,18 and the second was a more general Act of 2000, which replaced the 1996-Act.19 There were no major differences between the universal services regulations spelled out in these acts. The requirements for service provision, price capping and the procedures for appointing the universal service provider, were settled by the Ministry through an executive order on universal services.20 This order, which in itself was very detailed, authorised the Danish regulatory authority, the National Telecommunications Authority (NTA), to develop even more specific criteria for compliance with the obligations. The order further specified that the National Telecommunications Authority (NTA) should appoint the

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20 Executive Order no. 1010 of 6 November 2000. Executive Order on USO Services. Although there have been several versions of this order, the basic provision have been stable.
provider that either had at least 50% market share, or the largest market share, as the universal service provider with the obligation to provide the specified services to anyone demanding them. Following the described procedure, Tele Danmark was in 1998 formally appointed as the universal service provider for a period of 10 years.\textsuperscript{21}

This framework was stable in the period after liberalisation. The only small change in the universal services regime was in the price cap-regulations. Throughout the period, price caps should ensure a development in real prices that satisfied two criteria. The first was that the average private user’s telephone bill should fall by at least a certain percent (X) each year in relation to the CPI, and the second was that the average small-user’s bill should also fall with at least a certain percent (Y) annually. This division into average and small users is different from the Norwegian arrangements and was intended to protect small users from unwanted effects of price rebalancing. As in Norway, the price caps in Denmark related to a basket of services and rebalancing within this basket was accepted as long as the price of the total basket decreased according to the regulation. Such rebalancings, towards higher subscription charges and lower prices for use of telecommunications services, implied that even if there were substantial decreases in the average users bills, the small-users could experience price increases in their total bill, as subscription charges were the major part of their total expenses.

Until 2000, the price caps were decided by the Ministry through executive orders, whereas the new 2000 regulations transferred this responsibility to the regulatory authority, the NTA. The procedure was then that the NTA sat the price caps through letters to the universal service provider, Tele Danmark. for example, in 2000 it was stated that prices for average users (X) should fall by at least 4 percent in relation to the CPI (CPI-4%) in both 2001 and 2002, and for small-users prices (Y) should fall by at least one percent (CPI-1%) in 2001 and not rise in 2002 (CPI-0%).\textsuperscript{22} Based on this, Tele Danmark proposed a price list, which was controlled and sanctioned by the NTA.

\textsuperscript{21} National Telecommunications Agency. \textit{Vilkår for Tele Danmark AS varetagelse af visse forsyningspligtydelser på telekommunikationsområdet}. 23. February 1999

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Another change in the Danish regulatory frameworks was that, before 2000, a separate rule in the executive order stated that when price-structures were changed, no private customer should experience an increase in his or her quarterly bill of more than 50 DKK. This rule was an additional insurance for small users against increased bills as a result of price rebalancing. However, in a review in 1999 this rule was strongly criticised for hindering necessary price rebalancing and in 2000 it was removed as the price caps for average users and small-users were seen as sufficient to ensure that most subscribers would obtain a price decrease and very few would experience increases.

Irish Universal Service Implementation
In Ireland all operators needed a license and they all received standard licenses. Licencing therefore was not an instrument for regulating universal services. The Irish universal service obligations were specified in 1999 through a Statutory Instrument on Voice Telephony and Universal Services in 1999. This Statutory Instrument was a direct effectuation of two EU directives and revoked the universal services-section in the 1983 Postal and Telecommunications Services Act discussed earlier. However, the scope of the Irish universal service regulations remained stable from the monopoly era, and included the provision of network connections and access to telephone services, directory services, public pay telephones and specific measures for disabled users, but not digital network or ISDN as in Norway and Denmark. Further, the Statutory Instrument resembled the 1983 Act in that it stated that an operator with universal service obligations should meet any demand for network connection and telephone services in the geographic area identified “in so far as the fixed operator considers it reasonable”. Hence, the fact that the Irish obligation left this judgement to the operator was weaker than the Scandinavian obligations. However, the Irish regulatory authority, the ODTR reported that:

25 S.I. No 71 of 1999, European Communities (Voice Telephony and Universal Service) Regulation.
There have been no disputes over this issue. The ODTR has received complaints on installing times and quality, but no complaints over refusal to install (Interview with Leonie Allen, ODTR, 4 December 2001).

This indicated that there was a general compliance with the requirement to provide services universally. Furthermore, it also indicated that the Irish system of monitoring this universal service provision was not through systematic investigations, but as in Norway through individual complaints.

The ODTR was responsible for designating one or more operators as having an obligation to provide universal services. In this process the ODTR should consider who had significant market power defined as having a share of 25% or more of the relevant market. In 1999 the ODTR issued such an order\(^{28}\) which specified the elements of universal services in accordance with the regulation and stated that Telecom Eirean had this obligation in the whole state. The designation had no specific duration and was to be reviewed by the ODTR.

A major difference from the Norwegian and Danish regulations was that price cap regulations were not part of the universal service regulations in Ireland. However, these differences may seem more significant than they really were. As discussed above, Ireland did have price cap regulations, even if these were not grounded in the concern for distributive justice. In 1996, the Minister issued the first order which placed a price cap on Telecom Eireann’s tariffs,\(^{29}\) and in 1999, this was reviewed and moderately modified for the next three-year period.\(^{30}\) The basic structure of both price cap arrangements was that a price cap was introduced for a basket of services, which implied, similar to the arrangements in Norway and Denmark, that the tariffs of these services in total should fall by a certain percentage in relation to the consumption price index. The basket arrangement was meant to allow for price rebalancing as the prices on one of the services in the basket might decrease less than the total price cap if the total decreased according to the cap. In addition, two sub caps were introduced. The first was a sub cap for individual services and this was supposed to ensure against increased prices for any of the services within the basket. The second was a price cap for the lower quartile bills, which was an arrangement similar to the Danish price cap

\(^{28}\) ODTR D/99. Designation of Universal Service Provider

\(^{29}\) SI No 393 of 1996. Telecommunications Tariff Regulation Order.
on small user bills, and this was supposed to ensure that also small users (the lower quartile) experienced decreasing prices.

The following services were included in the 1999 price cap: the provision of telephone exchange and ISDN lines and connections, local and trunk calls, operator calls, directory inquiry calls and payphone calls. eircom (which was Telecom Eireanns new name) was required to achieve price reductions of 8 percent in relation to the consumption price index in each of the three years for the total basket of services (CPI-8%). The sub cap on individual services was set at CPI+2%, and the sub cap on the lower quartile bill at CPI+0%. Once a year, ODTR controlled eircoms prices for the previous year. In 2001, the ODTR did not have any cases of non-compliance with these regulations.

Variations in Universal Service Implementation
As we have seen, the basic procedures for implementation of the three states’ universal service policies were similar. They all imposed obligations on the largest operator to provide certain services, and they implemented price cap regulations to ensure affordable prices or to compensate for the lack of competition. Still, the differences were significant and not only related to the scope of the universal service obligations as discussed above. I will emphasise two additional sets of differences between the states.

One set of differences was institutional and involved the division of tasks between the national ministries and the regulatory authorities. In implementing universal services, the Norwegian Ministry was the most active. It was involved not only in developing regulations, but also in implementing obligations and price caps through its licensing. Further, it was the Norwegian Ministry’s responsibility to monitor compliance with the price cap. In contrast, the Danish Ministry had delegated more responsibilities to the regulatory authority, the NTA, which was responsible for designating the universal service provider and, after 2000, for both imposing and monitoring the price caps. The Irish Ministry also had a less active role than the Norwegian, as important

31 See for example ODTR 99/33, ODTR 00/35 and ODTR 01/20 in which the regulator expressed satisfaction with the price reductions. All Compliance statements on the Price Caps on Telecom Eireann (eircom).
functions both in specifying the universal service provision, and in designating the universal service provider had been transferred to the Irish regulator, the ODTR.

A second set of variations was between the states’ price capping arrangements. These were similar in that the states all employed a basket of services for calculating prices and related the price cap to the consumption price index. The main differences between the price cap regimes were which services were price capped, and whether or not there was a special cap for small users’ bills. Ireland and Denmark had included ISDN-connection and -services in their price cap arrangements, whereas Norway had not. Moreover, both Denmark and Ireland had imposed a special cap for small users in order to ensure these user groups against rising prices as a result of price rebalancings. Hence, Ireland and Denmark had more extensive price cap regulations than Norway. How can this be explained?

Earlier the role of the EU in national politics was discussed as one important factor that contributed to the different scopes of the three states’ universal services regulations. I argued that especially the controversial role of the EU in Norwegian politics contributed to a high degree of compliance with the EU definitions of universal service. This review of the implementation processes might, however, indicate some additional explanations. One of these may be the level of politication in the implementation process. In Denmark and Ireland, where the ministries’ involvement in implementation was lower, the regulations themselves needed to be explicit to allow transparent implementation. Extensive price capping could be regarded as part of this. In Norway, the legislation was less explicit, which may be an indication that politicians perceived that they also had other means of direct political interference. Another related explanation could be the differences in state ownership. The Norwegian state still held a majority of shares in Telenor, and there might have been a political concern not to put too large a burden on the company. A final explanation might be that there was a stronger need for price cap regulations in Ireland and Denmark than in Norway. If, in general, prices had been higher in these countries, this may explain why a more extensive price cap regulation was regarded as necessary in these states than in Norway. Questions like this last one will be considered in the next section.
Policy Outcomes
In the following, some of the outcomes of the states’ telecommunications policies will be studied. The main emphasis will be on the network development, diffusion of services and on the price levels. The purpose is to see if there are differences between the outcomes in the three states, to what degree these relate to differences in policies and implementations discussed above. As I have chosen to focus mainly on policy development, the investigation of the policy outcomes will be a broad overview based on existing statistical sources with comparable figures for the three states.

Developments on the Telephony Markets
As we have seen, telecommunications policies in Norway, Denmark and Ireland were concerned with promoting network development and ensuring a high penetration level of important services. This was a basic concern, both in order to promote economic development, and to ensure distributive justice.

Table 1 Telephone main lines per 100 inhabitants 1990-2001.

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<th>Norway</th>
<th>Denmark</th>
<th>Ireland</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>50.3</td>
<td>56.7</td>
<td>28</td>
</tr>
<tr>
<td>1995</td>
<td>56.8</td>
<td>61.2</td>
<td>36.3</td>
</tr>
<tr>
<td>2001</td>
<td>72.0</td>
<td>72.3</td>
<td>48.5</td>
</tr>
</tbody>
</table>


Table 1 shows that during the 1990s, the number of telephone main lines per 100 inhabitants increased rapidly in all three states. Norway caught up with Denmark in terms of telephone lines, and in 2001 they both had 72 lines per 100 inhabitants, among the highest penetration rates in the world. Ireland was, in spite of a rapid growth in the number of lines, lagging behind with only 48.5 lines per 100 inhabitants. This was a low number of lines, not only compared to the Scandinavian states. Within the EU, Ireland rated 11 out of the 15 member states (ITU 2002). Hence, the development of the number of telephone lines in the 1990s confirmed that the Irish network was less pervasive than the Norwegian and the Danish. Furthermore, the price levels of telephony reinforced this general pattern of divergence between the two Scandinavian states and Ireland.
Telephone charges in Norway and Denmark were considerably lower than in Ireland. As the figures in table 2 are adjusted for purchasing power, they illustrate that both telephone subscription and usage were more costly for Irish citizens than for Norwegian and Danish citizens. The Irish price level was also above both the OECD and the EU averages. Hence, the Irish telephone market was characterised by fewer main lines at a higher price level than in the Scandinavian states. This may be interpreted as a continuation of traditional differences in network developments and price levels between the states. Further, even if this may not imply that some regulatory regimes were more efficient than the other, precisely because the states’ starting points differed, it underlined the Irish need for price cap regulations, simply because telephony was more expensive. The fact that the Irish price caps prescribed higher percentage decrease in price levels than the Norwegian and Danish price caps, is in line with this finding.

Developments on the Internet Markets
Below, the diffusion of some services will be investigated more closely, using the Internet as a starting point. The Internet is an interesting example both because the use of the Internet has spread rapidly in all the three states studied, but also because important information and communications services are enabled through the Internet.

Table 3 shows that in 2001 the majority of the citizens were personal Internet users. Norway and Denmark were among the states in the world with the highest percentage of Internet users as about 70% of the citizens used the Internet. But also in Ireland a majority of 56% of the general population were Internet users. Even if Ireland had a lower percentage of users than the Scandinavian states, it still rated far above the EU average.

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**Table 2 Prices. OECD basket of residential telephone charges, August 2000 (excludes international calls and calls to mobile networks). USD PPP (US dollars adjusted for purchasing power).**

<table>
<thead>
<tr>
<th></th>
<th>Norway</th>
<th>Denmark</th>
<th>Ireland</th>
<th>OECD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed</td>
<td>186.55</td>
<td>173.90</td>
<td>230.13</td>
<td>195.55</td>
</tr>
<tr>
<td>Usage</td>
<td>119.63</td>
<td>119.31</td>
<td>216.23</td>
<td>207.13</td>
</tr>
<tr>
<td>Total</td>
<td>306.19</td>
<td>293.21</td>
<td>446.36</td>
<td>402.68</td>
</tr>
</tbody>
</table>


---

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Calculated from OECD 2001, table 7.8, the average EU total basket accounted for 379.23 USD PPP.
average. Consequently, in spite of a relatively low level of telephone main lines, Ireland was still above the EU average in terms of Internet users.

Different kinds of networks could, however, be used for accessing the Internet. Most Internet services, such as e-mail and most web-sites can be accessed with a modem connected to the ordinary telephone network. But, when more services are provided through the Internet, the capacity of the ordinary telephone network becomes too narrow for effective use of these services. Other more advanced services include services such as ISDN, which may double the capacity of the telephone line, and ADSL, which is an asymmetrical network which may enable reception of moving images. Further, broadband networks are being developed with a much higher capacity and which may enable transmission of high quality television or similar services.

Table 4 Kind of Internet access in homes. November 2001. Percent of Internet users.

<table>
<thead>
<tr>
<th></th>
<th>Norway</th>
<th>Denmark</th>
<th>Ireland</th>
<th>EU15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard telephone line</td>
<td>38</td>
<td>61,4</td>
<td>91,1</td>
<td>71,8</td>
</tr>
<tr>
<td>ISDN line</td>
<td>54,2</td>
<td>19,2</td>
<td>5,1</td>
<td>16,0</td>
</tr>
<tr>
<td>ADSL line</td>
<td>3,0</td>
<td>11</td>
<td>0,3</td>
<td>6,3</td>
</tr>
<tr>
<td>Cable modem</td>
<td>3,2</td>
<td>7,2</td>
<td>3,6</td>
<td>9,1</td>
</tr>
</tbody>
</table>

* Multiple answers possible

Table 4 presents which kinds of networks were used for Internet access in the homes and shows quite divergent levels of diffusion of the different networks between the states. In Norway, a majority of the Internet users used other means of access than the standard telephone line. The most frequent kind of access was ISDN, which was employed by 54% of the Internet users. The standard telephone line was still significant as it was used by 38%. Other means of access were, however, of minor importance. In Denmark, the situation was different. Here, the majority of Internet users still accessed Internet through the standard telephone line. ISDN had not diffused as widely as in Norway and less than 20% accessed Internet through ISDN.

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33 The ordinary telephone line has a capacity of 56 kb/sec.
34 Integrated Services Digital Network. This has a capacity of up to 128 kb/sec.
35 Asymmetrical Digital Subscription Line. This may have various capacities depending on the kind of subscription. Telenor, for example, offers three kinds of subscriptions where the capacity to receive data varies between 384 to 1024 kb/sec, and the capacity to send data varies between 128 and 256 kb/sec [http://privat.telenor.no/dinesider/default.aspx?a=goProduktAdslHastighet] June 2002.
36 The definition of broadband is contested. Most agree that broadband means at least a capacity of 2Mb/sec. In addition, some hold that ‘real broadband’ has a capacity of between 5 and 10Mb/sec.
lines. ADSL was, however, more popular in Denmark than in Norway and 11% of the Internet users employed ADSL. Cable was used by 7.2%. In contrast to these figures a large majority of 91% of Irish Internet users used the standard telephone line for their Internet access. Only 5% used ISDN, 3.6% used cable modem, and ADSL was almost non-existent.

How can these differences be explained? The Irish high degree of reliance on the standard telephone line for Internet access, and the lower use of other and faster kinds of access was expected. Generally, Ireland had a lower level of telephone penetration, a less developed network, and a lower percentage of the population were Internet users. It was therefore not surprising that Ireland also had a lower level of Internet access through ISDN and ADSL than Norway and Denmark. As we shall see in Table 5, the cost of ISDN subscription in Ireland was also higher than in the other two states.

Yet, the Norwegian and Danish patterns were also divergent, both regarding ISDN services, where the diffusion was much higher in Norway, and regarding ADSL, where the diffusion was higher in Denmark. Considering the diffusion of ISDN, the difference between these two states seem surprising at first glance. There were no significant differences between the states regarding the percentage of households with Internet access, or the percentage of population that were Internet users. Further, Denmark had imposed a price cap on ISDN to ensure lower prices whereas Norway had not. Still, fewer Danish Internet users accessed the Internet through ISDN lines. One possible explanation for this could be that the Danish price caps were introduced because the Danish ISDN prices were much higher than the Norwegian and that it therefore was more needed in Denmark to price cap such services. However, a comparison of the price levels indicates that this was not the case.

Table 5 ISDN prices. May 2002. Norwegian kroner (NOK)

<table>
<thead>
<tr>
<th></th>
<th>Norway (Telenor)</th>
<th>Denmark (TDC)</th>
<th>Ireland (eircom)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subscription, month</td>
<td>239 NOK</td>
<td>167.68 NOK</td>
<td>281.43 NOK</td>
</tr>
<tr>
<td>Connection price</td>
<td>0.59 NOK</td>
<td>0.25 NOK</td>
<td>*</td>
</tr>
<tr>
<td>Price per minute</td>
<td>0.21 NOK</td>
<td>0.25 NOK</td>
<td>0.09 NOK</td>
</tr>
</tbody>
</table>

As Table 5 shows, the Danish price levels were considerably below the Norwegian on subscription rates and initial prices, whereas prices per minute were slightly higher.\textsuperscript{37} The reason for the different ISDN diffusions in Denmark and Norway must therefore lie elsewhere. The Danish regulatory authority, the NTA, suggested that the main explanation for the low Danish solution was not to be found in the regulatory framework, but in the business strategy of Tele Danmark which did not emphasise the ISDN market as much as Telenor did in Norway.\textsuperscript{38} Although the regulatory framework was developed in order to promote ISDN development in Denmark, ISDN was more widely used in Norway where ISDN had been an important part of Telenor’s national marketing strategy for many years.

These differences in the diffusion of ISDN may also contribute to explaining the differences in ADSL development. In Norway, where ISDN was widely used, few seemed to upgrade their access to ADSL. In Denmark, ISDN had not diffused equally widely, and, consequently, ADSL had a larger potential market when this service was introduced. This might indicate that users in Denmark leapfrogged the ISDN stage and went directly on ADSL. A supplementary explanation could be that the companies’ strategies varied not only concerning ISDN, but also concerning ADSL, and that Telenor had a less offensive strategy for ADSL than Tele Danmark. This would not be unexpected, as geography would make ADSL-development more costly in Norway than Denmark. This study does, however, not provide any conclusion about this.

To sum up, in this overview of the policy outcomes we have seen that the pattern that Norway and Denmark had a more pervasive telephone network and lower prices than Ireland, still prevailed. Further, ISDN penetration was highest in Norway where Telenor had actively promoted the service, and not in Ireland and Denmark where the states actually had imposed price caps on ISDN in order to make the service affordable. ADSL, however, seemed to diffuse faster in Denmark than in the other states. Hence, it seems that the differences between the states are in close relation to

\textsuperscript{37} Although these prices are from 2002, the Danish price caps for ISDN indicate that there has not been any sudden price decreases on ISDN in Denmark. We may therefore assume that even if the level of price differences may have changed, the basic pattern was relatively consistent.

the differences in the states’ starting points regarding network development, and the former monopoly companies’ market strategies, and not only to the regulatory measures. This may have several explanations which can only be discussed speculatively in the context of this study. One such explanation could be that there was little difference between the effectiveness of the different implementation strategies and that the differences in service provision and prices were the result of the general state of the networks before liberalisation. Another explanation could be that the new regulatory regimes only had a short history and more time is needed in order to conclude on its effectiveness. If so, it would be interesting to investigate further whether the different levels of political involvement in the implementation process would have implications for the provision and prices of services.

One possible consequence of the different levels of political involvement in the implementation process in the three states could be that the detailed levels of regulation is strictly necessary in a competitive market in order to ensure compliance with the political objectives. If this is the case, then the Norwegian regime may prove less effective than the Irish and the Danish ones. We could, for example, expect that the lack of sub-caps on small user bills may result in a general price increase for the small users. Such a development would imply that the more politicised Norwegian regime might over time be less effective than the other states’ regimes in ensuring distributive objectives.

An opposite consequence might be that the detailed levels of regulation make market actors merely choose minimum compliance in the sense that they comply with the obligations and price caps imposed, but nothing beyond that. According to this line of thought, a more politicised and less transparent regulation may make the market actors stretch in order to comply with the intentions of the politicians to avoid specific market interference. Such a development would imply that the Irish and Danish regimes would be minimum solutions and less effective than the more politicised Norwegian for objectives of distributive justice.

Which of these developments would be most likely cannot be answered decisively at present. Therefore, the outcomes of the market and the new regulatory regimes should be closely monitored in order to evaluate whether the measures imposed are effective
in ensuring distributive justice of communicative resources important for citizenship, or if adjustments should be made. An important challenge for the future will be the development and diffusion of more advanced services. As we have seen in this chapter, except for ISDN in Norway, more advanced services had only reached a small minority in these states. Consequently, there is a long way to go to reach a high level of penetration of such services, and an interesting question is whether such a development can and will be promoted through regulatory measures.

Concluding Remarks
This project has analysed ICT and telecommunications policy development in Norway, Denmark and Ireland, and the findings are necessarily mainly about these cases. Some of the conclusions may, however, have implications beyond these states. One of these is the tension between international constraints and national concerns. I have argued that in spite of a significant degree of convergence between the states’ general telecommunications policies, the national concerns are still important in policy-making. Further, as this paper investigated the situation in small states, which could be expected to be especially sensitive to international constraints (Katzenstein 1985), we may assume that national differences will prevail also in other states, when their national concerns are actualised, such as the concern for distributive justice did in this analysis.

We have also seen that even though the concern for distributive justice was widely emphasised, the distribution of advanced services was basically left to the market even in the social democratic Scandinavian welfare states where we might have expected the most market interference for distributive purposes. Consequently, we may assume that the market will be an important distributive mechanism also in other states with less egalitarian traditions. The distributive effects of this liberalisation as well as the effectiveness of the new regulatory regimes are, however, questions for future research.

Furthermore, this analysis of telecommunications policy may also provide some insights about more general policy reforms in the early 2000s. Several studies have shown how European welfare states are undergoing major changes in sectors like education, health care and energy (Esping-Andersen 1996; Hagen 1999; Tranøy and
Østerud 2001). In these sectors, privatisation and liberalisation are key developments, and competition and market regulations are substituting ownership and political governance as managing mechanisms (Grønlie 2001). The liberalisation of the telecommunications markets may in this context be regarded as one case that confirms these broader processes of transforming the European welfare state. Important questions in telecommunications policy, as in the other processes, concern whether or not political objectives are changed with these reforms. Politicians claim that the ambitions for distributive justice remain stable in the liberalised regimes. But is this the case, or is liberalisation an indication of more fundamental changes in European politics, that is, away from egalitarian values and towards larger acceptances of differences?

References
EOS Gallup Europe (2001) Flash Eurobarometer 112 “Internet and the Public at Large”, Gallup Europe