

# **Traditional Regulatory Approaches and the Postal Service Market\***

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## 1 Introduction

Postal services are an important part of modern economies' communication and distribution infrastructure. They provide a distribution system for information and goods that connects communications and logistics, and often add important financial services to support economic transactions. Numerous industries directly or indirectly depend on the postal industry.<sup>1</sup>

Stepwise market liberalization and privatization of former public postal monopolists pursue the goal to enhance the efficiency of the postal service sector. The creation of a level playing field that ensures fair competition is an important element of the liberalization process. The general trend to introduce competition in the postal industry is possibly most visible in Europe. Since the European commission published a Green Paper on the development of the internal postal market,<sup>2</sup> the reserved monopoly areas of public operators were reduced three times (1999, 2003, 2006), and the Europe-wide full market opening is envisioned by the end of 2012 at latest.

In the telecommunications industry, regulation is based on the existence of fundamental market failure in network industries in combination with natural monopoly properties and large sunk costs, leading to substantial barriers to entry. Regulation basically is justified by the economic rationale that unregulated competition will be less efficient than regulated competition. Access regulation is based on the identification of essential facilities (or *monopolistic bottlenecks*) and aims at inducing (efficient) entry and competition in the remaining potentially competitive parts of the industry. Accompanying retail price regulations counter the abuse of monopoly power in retail markets which are dominated by the former state-owned monopolists.

Initially, access and retail regulations have been proposed as transitory measures. Recent institutional developments in the EU (in particular, in telecommunications), however, indicate that market regulation has become permanent. The experience in the telecommunications industry with access and price regulation is ambiguous, often it distorted investment decisions, confirmed the (assumed persistent) monopoly and spurred service based competition with a related lack of investment into innovations and concerning in-

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<sup>1</sup> Examples are e-commerce, banking and insurance, and advertisement and marketing industries.

<sup>2</sup> EU (1992).

termodal competition. Recent trends in the EU show that postal service markets are likely to be regulated as if they essentially shared the characteristics with the telecommunications sector. The alleged similarity, however, disappears when we study technological and economic features of postal service markets precisely.

As we will argue postal service markets have much more in common with standard markets as e.g., retailing, where sector-specific regulations are absent. Underestimating the differences between postal service markets and telecommunications markets concerning contestability or the technological features of the underlying network may very well lead to distortions and suboptimal market performance when the toll set used in telecommunications markets is imprudently applied to postal services.

In the following, the two instruments *downstream access* and *retail price regulation*, typically used in telecommunications regulation, are assessed from the postal sector perspective. Our comparison provides transparent illustration of the differences and allows to highlight the specifics of postal markets.

### *Main findings*

The main conclusions that can be drawn concerning the appropriateness of the transfer and application of traditional network regulation to postal markets are:

1. The postal industry generally cannot be treated like telecommunications or other infrastructure-tied network industries. Accordingly, regulation, especially downstream access regulation, is generally not justified, taking low entry barriers, the likeliness of the emergence of competition without regulation, and electronic substitution for postal services with substantial cost and innovation pressure on the supply side into account. Additionally, on the demand side, significant sender concentration and the related substitution threats lead to additional competitive pressure on operators, further reducing the need for regulation. In any case, regular adjustments to the permanently changing market environment are necessary.
2. Very few non-replicable assets constitute an essential facility, e.g. access to PO boxes in operators' facilities. In these rare cases, (symmetric) regulation might be justified, if voluntarily negotiated solutions cannot be achieved.
3. Safeguarding competition and deterring anti-competitive behavior can be achieved by means of ex post control based on general competition law. Additionally, anti-

competitive practices are less likely than in other industries where non-replicable assets are elementary for all services.

4. Safeguarding consumers might be achieved through focusing only single-item tariffs and conditions, not prices in general. This approach allows to reduce, if not to abolish tariff regulation.

## **2 Network Regulation**

### **2.1 Competition and economic efficiency**

In principle, competition is expected to lead to economically efficient allocations with respect to both static and dynamic efficiency. The underlying reasoning is based on the firms' incentives to maximize their profits as well as a number of additional assumptions concerning the market structure and the firms' conduct. First, in order to avoid monopolistic and thus inefficiently high consumer prices, each firm has to face either actual or potential competitors. Low entry barriers as well as the firms' ability to use the same or similar technologies are basic conditions which have to be fulfilled in order to guarantee that competitive market allocations are efficient. Second, consumers need to have sufficient information about the firms' prices and the qualities of the products they offer. Finally, a number of further conditions concerning the functioning of the legal system have to be satisfied. That is, the enforcement of agreements has to be ensured in order to allow the parties to write enforceable contracts that circumvent potential commitment problems and moral hazard.

Whereas the just mentioned conditions are crucial for static efficiency, dynamic efficiency is based on efficient investment decisions with respect to both process and product innovations based on the firms' expectations to gain competitive advantages vis-à-vis their competitors and to earn at least temporarily supra-competitive profits. The analysis of investment decisions in risky environments and taking into account those firms' incentives to invest are based on the potential gains from innovations and reveals that there is basic trade-off between static and dynamic efficiency. Hence, to reach dynamically efficient competition, innovations have to be protected such that potential profits are high enough to give the firms the right incentives to undertake risky investments in order to develop new technologies or products. Although this basic conflict between static and dynamic efficiency cannot be solved in a first best manner, it is generally assumed, that

decentralized innovation processes driven by expected gains from temporarily limited dominant market positions are the most efficient way to solve the related investment problems.

## 2.2 Network industries

Traditionally, nearly all network industries, e.g. telecommunications, electrical energy supply, railways, water supply and disposal, and postal services, have been assumed to be characterized by technologies with subadditive cost functions.<sup>3</sup> This view had led to the provision of the respective services by protected private monopolies, public owned enterprises or directly by public administration entities. Over time, views changed and competition is now supposed to lead to more efficient allocations in large market segments. The basic argument for this new approach rests on the idea that many production processes are vertically structured. Basic infrastructures like telecommunication cables or electricity grids are inputs for the products and services to be carried over the networks.

Consequently, the current approach emphasizes that production processes have to be considered such that competition should be introduced in all market segments where the respective production technologies allow for competition. More specifically, monopolistic provision of inputs should be reduced to market segments where *essential facilities* exist. Essential facilities (or monopolistic bottlenecks) are defined as inputs that are unconditionally necessary to provide certain goods or services and that are unfeasible or too costly to be duplicated or to be bypassed. At the same time there must not exist sufficient demand side substitution possibilities for the service itself. Shortly, essential facilities not only have to be non-replicable but also non-substitutable with regard to the service they are needed for.

## 2.3 Networks and regulation

Following the idea that competition leads to efficient market allocations whenever the conditions mentioned above are met, regulation should be confined to market segments where essential facilities exist. That is, regulation should address the industry specifics that lead to market failures, limit the firms' exercise of market power and try to prevent abusive conduct of market dominance.

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<sup>3</sup> For a formal definition of subadditivity, c.f. Baumol / Panzar / Willig (1982), p.17.

### 2.3.1 Access regulation

The basic idea of access regulation relies on the concept of essential facilities. If the provision of goods or services is based on the use of essential facilities, the right to use these facilities should allow for competition in all other market segments. If firms face the same conditions to use the respective essential facilities, there exists a level playing field such that market entry and actual or potential competition between firms leads to efficient allocations. Thus, access regulation tries to combine competition in potentially competitive market segments with a regulated monopoly where it cannot be avoided (or where a legal monopoly is granted). Access regulation grants competitors access to elements or parts of the production chain. Table 1 provides some examples for regulated access in network industries.

**Table 1: Examples of downstream access in network industries**

Industry	Downstream access to	Competitive segment
Electricity	Distribution grid	Generation
Rail transport	Rail tracks	Transport operations
Telecommunications	Local loop*	Long distance networks
Water	Supply and disposal	Treatment

\* Under Calling Party Pays regime, call termination service is also an essential facility.

Source: modified from Haucap / Dewenter (2007, chapter 1)

In all cases, the starting point for access regulation is imperfect competition based on the existence of a monopolistic bottleneck and the observation that even if the owner of the monopolistic bottlenecks is not vertically integrated, unconstrained monopolist behavior would lead to an abuse of the monopolistic market power and thus inefficient allocations.

Additionally, the introduction of competition by means of regulated access might be desirable even at a loss in economies of scale and increased overall costs<sup>4</sup> mainly for two reasons:<sup>5</sup>

- Competitors might offer differentiated services, improving the match with consumer preferences, and

<sup>4</sup> Overall costs might increase furthermore from technical and organizational co-requirements.

<sup>5</sup> Laffont / Tirole (2000), p. 100.

- they might offer existing services at lower prices due to lower (downstream) production costs, e.g. for retailing and lower profit margins.

Downstream access regulation therefore pursues a dual purpose: First, it aims at improving the incumbent operators' incentives for efficiency and, second, it aims at encouraging (downstream) competition.<sup>6</sup> By allowing pure service-based entry or the possibility for entrants to use access for a transitional period according to the ladder-of-investment model, competitors can build up their business at the same scale as the regulated firm. This includes the establishment of customer relations as well as successive investments in own infrastructures. Entrants might invest in complementary assets and efficient bypass, realizing the possibility of infrastructure-based competition in the long run as well as increasing competitive pressure on the bottleneck owner today. Overall, access policy has to balance the efficient use of existing networks and entry in order to achieve the market structure being most efficient in the long run.<sup>7</sup>

#### *Instruments and access charges*

In cases where access regulation is introduced, access (and resale) obligations include a wide range of possibilities that are asymmetrically imposed on the owner of the essential facility.<sup>8</sup> Regulated access implies not only non-discriminatory access to physical resources and corresponding pricing to effectively lower entry barriers. In order to ensure a level playing field, further remedies may be necessary. To address the problem of exclusionary abuses, even more intrusive additional structural measures like divestiture obligations ("ownership unbundling") might be used. In any case, access regulation cannot prevent dominant positions and only reduces the incentives for anti-competitive conduct. The effectiveness of access regulation depends to a large extent on the national regulatory agencies' monitoring effectiveness.

Considering the design of access charges, the main problems are to encourage the right amount of entry, and encourage efficient network investment and network utilization,

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<sup>6</sup> Laffont / Tirole (2000), p. 37.

<sup>7</sup> Vogelsang (2003).

<sup>8</sup> Symmetric downstream access usually is applied in cases where access to the final users is needed, as e.g. in the case of termination monopolies. In these cases, the distinction between one-way- and two-way-access depends on the characteristics of the access-seeking firm.

while being manageable.<sup>9</sup> The two major problems concerning access charges are based on *i*) the observation that deviations from marginal cost pricing are necessary in order to ensure that the regulated parts of the network can be operated profitably and *ii*) the fact that any distortions due to imperfect competition on downstream markets have to be taken into account as well.

Focusing on the first problem, theoretically optimal access charges are based on the classical *Ramsey* rule. Ramsey-based access charges minimize the efficiency loss due to access charges that are not equal to the marginal cost of getting access. They are based on both marginal costs as well as the properties of the demand functions on downstream markets. However, the informational requirements of such access charges as well as the necessity to adapt access charges whenever demand or cost change imply that they cannot be implemented without high costs of the regulation itself.

Most of the approaches used to regulate access rely on cost measures only and ignore the properties of downstream demand. For the determination of the level of access charges, one has to decide between historic cost or forward-looking cost. While historic cost measures guarantee that the incumbent's actual costs can be covered, access charges based on historic costs may lead to inefficient investment decisions of competitors. For example, with technological progress and decreasing network costs, they tend to induce too much investment by competitors inasmuch historic costs and thus the respective access charges are higher than the actual opportunity costs.

Access charges based on forward-looking costs (FLCs) mitigate this problem since costs are calculated such that they reflect the costs for setting up the respective infrastructure at the moment. However, with costs that are decreasing over time, FLCs imply that the actual costs of the regulated firm might not be fully covered. Furthermore, compared to historic costs, FLCs induce higher risk for the regulated firm. FLCs are subject to technological uncertainty and thus increase the uncertainty with respect to future access charges. Both cost variants neglect *ex ante* risks with respect to future demand. Therefore, they are not able to capture the option value of waiting that is relevant for investment decisions under uncertainty.

Moreover, linear access charges based on simple costs measures ignore potential economies of scale and scope from providing access either for large scale competitors or for

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<sup>9</sup> Vogelsang (2003), p. 832.

competitors who use different modes of access. If price regulation gives the regulated firm the right to choose relative access charges as well as non-linear access charges, these mechanisms also imply that the regulated firm will distort its access charges in order to increase its profits. Rate of return regulation implies that relative access charges tend to be distorted in favor of relatively capital intense access services. Price cap regulation provides the incentive to use non-linear access charges with inefficiently high fixed fees and large quantity discounts.

Additionally, access charges under both types of regulation are vulnerable to strategic manipulations concerning downstream competition. Under both regulatory approaches incumbents can choose their access charges such that access in specific market segments is unprofitable. Hence, rate of return regulation and price cap regulation both have to be complemented by non-discrimination obligations and (single) price controls. Additional instruments comprise measures that directly target the relation between access charges and retail prices.

Summarizing this discussion, it turns out that it is not possible to develop theoretically optimal costs measures that rely on costs only. Hence, while commonly used cost measures have the advantage of relatively low informational requirements, they are not appropriate if efficient investment decisions under uncertainty with respect to technological developments and future demand are considered. Ignoring risk and the appropriate options values leads to inefficiently low access charges and therefore to inefficiently low investment incentives of competitors as long as infrastructure investments or bypass are considered.

### **2.3.2 Retail price regulation**

At first glance, retail price regulation seems to be dispensable if access to essential facilities is regulated. Providing a level playing field, access regulation alone should suffice to ensure competitive market allocations on downstream markets. However, this reasoning is correct only if one adheres to the assumption of perfectly competitive downstream markets. In this case, retail prices would be equal to the charges for the required access services plus the costs for the provision of the respective downstream products or services.

These results change drastically if imperfect competition on downstream markets and dominant market positions of vertically integrated incumbents are considered. Then, retail price regulation serves the following two purposes:

- Deterring the dominant incumbent from abusive practices on final consumer markets, and
- Re-aligning price distortions induced by regulatory interventions.

While inefficiently high price levels point to monopolistic price cost margins and predominantly harm consumers, distorted price structures can serve to extract additional consumer surplus and to harm potential competitors.

Taken together, these results show that retail price regulation may in fact be necessary if access charges are not in line with the actual costs of using the respective network elements or services and if downstream markets are not perfectly competitive. Additional measures like the imposition of replicability standards, restrictions concerning potential price cost squeezes as well as obligations concerning the offer of unbundled products and services are necessary to prevent (vertically integrated) dominant firms from abusive practices on downstream markets.

These conclusions continue to hold if retail prices are regulated according to either type of regulation. Since rate of return regulations as well as price cap regulations mainly focus on the price levels they are not designed to deal with anti-competitive effects. Similar distortions can arise under rate of return regulations. Whereas different elasticities of demand are crucial under price cap regulation, rate of return regulations provide strong incentives to offer capital intense products at prices that are below the (undistorted) opportunity costs of competing firms.

## **2.4 Summary**

The modern approach to regulation of network industries relies on the notion of essential facilities and the idea that competition should be allowed wherever it leads to efficient market allocations. A closer look at the implied regulatory necessities shows that the actual implementation of efficient regulations is rather demanding. Considering dynamic efficiency reveals that simple cost based access charges lead to inefficient investment incentives as long as uncertainty about future developments of technologies and demand is taken into account. Moreover, the relation between the optimal regulation of access to existing infrastructures or essential facilities and the incentives to invest in bypass technologies is even theoretically a still unsolved problem.

Assessing actually used regulations like linear access charges based on forward looking costs and price cap regulation on downstream markets shows that these mechanisms lead

to additional distortions and potential inefficiencies. This is especially true if downstream markets are not perfectly competitive. In order to prevent regulated incumbents from abusing their dominant market positions simple regulatory mechanisms have to be complemented by additional obligations which are specifically targeted at the regulated firm's incentives to extract consumer surplus and to restrain competition.

Therefore it becomes questionable, whether access regulation is the default answer for network industry frameworks, especially if largely unregulated competition would be feasible, e.g. through technological progress, as it is observable in the mobile communications industry.

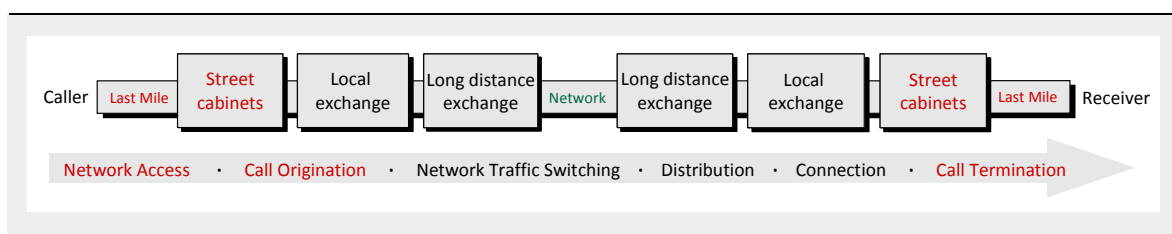
### 3 Downstream Access

#### 3.1 Economic rationale and implementation in telecommunications

“The fundamental problem of all communications policy is the access network, also called the last mile or local loop”.<sup>10</sup>

For illustrative purposes, the bottleneck elements within the telecommunications value chain are illustrated on basis of (fixed network) voice telephony. Voice telephony consists most basically of the services call origination, call switching including connection, and call termination. All of these services fundamentally rest on physical network access over the *last mile* (the local loop) as well as on a suitable *addressing scheme*. The last mile consists of the connections to the network in the street cabinets and the access lines between the street cabinets and the customer premises. Therefore it represents the crucial gateway for service provision. Figure 1 illustrates a typical telecommunications network.

**Figure 1: Telecommunication networks and related services**



Red elements and services: (local) natural monopolies for (given fixed) network technology.

Source: DIW Berlin

<sup>10</sup> Hundt / Rosston (2006), p. 1.

Additionally, telephony networks are service specifically optimized infrastructure-tied networks.<sup>11</sup> Services are provided over an electronic network which starts at the end user device interfaces in the facilities of the customers and connect the users bi-directionally over street cabinets, local and long distance exchanges which are permanently physically connected. To install such a network, substantial construction work is required in order to install the facilities required. Once in place, the subsequent costs are largely independent of the actual network usage.

Usually, the last mile is considered to represent an essential facility, while undisputedly being a natural monopoly (for a given fixed network technology) and the least replicable input. Whether monopolistic bottleneck elements in the telecommunications are true essential facilities or “near-essential” facilities (as titled by the Canadian Radio-Television and Telecommunications Commission), depends not only on the costs for duplication given of the technology used, but in addition on the extent, to that the costs are indivisible sunk investments, and on demand conditions. Economies of scale, scope, or density by themselves might create a natural monopoly and high entry barriers, but are not sufficient to constitute an essential facility. Usually, one-way access regulation does not rest on the rigorous criteria of essential facilities but rather on the identification of SMP of the network operator and the expected gains from introducing competition to potentially competitive segments.

Especially in highly dynamic industries like the telecommunications industry, two additional aspects arise: First, technological progress might increase the replicability of certain assets, in extreme making essential facilities obsolete, or, more moderate, bottlenecks or possible access points might change with the evolution of technology. One example for this phenomenon can be observed in UK, where the evolution of BT/Openreach’s legacy telephony network to the *21CN Next Generation Network* reduced the network by one layer and, as a consequence, changed the geographical network structure including the location of access points as well as the technically viable options for access to the network. In this case, the reluctance of competitors to the existing network and the related path dependencies led to compensation claims from competitors had to be dealt with due to stranded costs from specific investments in infrastructure complementary to BT’s former network.

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<sup>11</sup> Further examples for such networks include electricity, railway and water networks.

*Service competition*

Telecommunication networks provide a wide range of possibilities for mandated access, which generally can be classified according to the requirement for entrants to build their own infrastructure, the extent of control over the customer's local loop, and whether they are considered as a transitory step towards facilities-based competition or intended to be permanent regulation. While the entry strategies and business models that become possible are closely related to the scope of the regulation, both, service competition and access-based infrastructure competition might be limited with regards to the possibilities to offer differentiated products.

Call-by-call, carrier preselection and resale obligations allow entrants to use the incumbents' existing network infrastructure to offer exactly the same services as the network operator under their own brand name. Besides complementary services as customer service or bundles with end user devices, price competition, e.g. based on cost or strategy advantages in marketing, is focused. Although call-by-call and carrier preselection are widely considered as important step stones to introduce competition from new entrants and to allow consumers to "try" competition with low switching costs, they were also responsible for technically inefficient (re-)routing and a lack of technological innovation. Hundt and Rosston (2006) claim, as unbundling and line sharing were dominated by wholesale offerings in the beginning, infrastructure investments were not really observable.<sup>12</sup> Champeaux, Hennes and Lebourges confirm this view, stating "the 1998 telecommunications liberalization [...] (has) a doubtful record on productivity, innovation and sustainable entry. Concerning unbundling and wholesale obligations (there have to be noticed) negative results for industry conduct and performance".<sup>13</sup>

In central Europe with already high network penetration rates, the effects were mainly price reductions and increased network usage. In Eastern and Central Europe, the fast tariff rebalancing to prices reflecting the underlying costs and the associated abolishment of markups contributing to the network access led to significantly increased monthly charges, which in turn stopped the growth of fixed line network penetration. In some

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<sup>12</sup> Hundt / Rosston (2006).

<sup>13</sup> Champeaux / Hennes / Lebourges (2006), p. 161.

countries, less than half of the household are subscribers to a fixed line network, which today causes significant problems concerning internet access penetration and usage.<sup>14</sup>

#### *Facilities-based competition*

Access to ducts, local loop unbundling, naked DSL, line sharing, and bitstream access are the regulatory policy options that require facilities-based entry. Unbundling has been introduced in the U.S. and in the EU as the two most important legislations worldwide in 1996.<sup>15</sup> Within the EU, in the meanwhile a directive dealing exclusively with unbundling and interconnection was added to the regulatory framework.<sup>16</sup> In both frameworks, fair charges are mandated and non-discrimination as well as transparency rules apply. The selection of elements eligible for access in both legislations is based on the concept of market power. Furthermore, with the exception of Mexico, in the meantime all OECD countries require some form of local loop unbundling (LLU, as downstream network access usually is called in telecommunications), although with a widely varying scope of the obligations imposed.<sup>17</sup>

The theoretically predicted difficulties arose in all areas, concerning the discrimination incentives between competing firms (especially the question whether to prevent the roll-out of competing networks with low access prices), concerning mutual dependencies, as illustrated above for the 21CN restructuring case, and that with complementary assets, investment and innovation are expected to be higher for vertically integrated systems. Additionally, fierce discussions of the access terms (on prices, qualities, requirements) and extensive renegotiation attempts could be observed.

Although access to ducts became popular only recently in the context of the roll-out of (mainly fiber-optical) Next Generation Networks, in the U.S., access to ducts of telecommunications operators is regulated since 1996, and even longer in the case of cable operators and electricity companies. Due to the timeliness of this issue, most European countries examine this remedy. In Portugal and Germany, access to telecommunication ducts is available since 2004 and 2006, respectively, whereas in France, this option is *de facto* available.

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<sup>14</sup> Champeaux / Hennes / Lebourges (2007).

<sup>15</sup> Federal Communications Act (1996) 47 U.S.C. §§ 251-252 and Directive 96/19/EG.

<sup>16</sup> EU (2002a).

<sup>17</sup> OECD (2007), pp. 53 ff.

Overall, duct access regulation seems to be promising mainly for two reasons. First, using existing ducts reduces the likelihood of natural monopolies, because the ducts provide enough space for multiple access lines which can be deployed at relatively low cost. As a consequence, symmetric regulation is most probably possible. Second, regulation is only necessary at the deepest level of the infrastructure and therefore sustainable network competition can be achieved.<sup>18</sup>

Considering the access pricing, according to the U.S. TELRIC approach (as well as the in the EU widely used *cost of efficient service provisioning* concept), a rate for each network element is calculated. This rate equals the cost of creating and supplying the element using an up-to-date network. Thereby these approaches ignore the fact, that the lack of compensation for investment risks is anticipated by investors, thus leading to underinvestment. At least, to account for historical decisions (and related path dependencies), in some cases certain elements of the network are considered as given instead of being variable, e.g. the network node buildings. Generally, access obligations and the related price controls have high information requirements. Hence, the best choice strongly depends on the incentives and ability of the NRA to carry out the related analysis methods.

#### *Additional requirements*

With access regulation, overall costs might increase additionally from technical and organizational co-requirements, e.g., from the implementation of accompanying co-location space, access management services and measurements to reduce switching costs (like number portability). Also, in most cases behavioral remedies to the problem of bottleneck governance are unlikely to be successful in eliminating anti-competitive practices, especially in the case of deteriorated access quality, long service request response times and other non-pricing anticompetitive behavior.<sup>19</sup>

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<sup>18</sup> “Promoting competition at greatest depths” is one of the key principles stated by Ofcom in UK. Regulation should be implemented at the deepest level possible, concerning the 21CN topology network depth (with three levels in UK: local loop, metro node, core node, where the level for regulation is likely to depend on the urbanization of the relevant area) as well as service level depth. Ofcom (2004), p. 1.

<sup>19</sup> Lyon (2000), p. 79.

*Vertical separation*

Following the logic to separate monopolistic and competitive market segments, the most consequent measurement is structural or vertical separation that re-establishes a separated monopoly which can be interpreted as an access obligation with the extended requirement of ownership divestiture. In infrastructure based networks, one central issue often is to what extent vertical integration should be allowed. Vertical integration alters the industry performance by changing the composition and the nature of downstream competition (direct welfare effects), where retail supply can enhance competition and by affecting the incentives to discriminate (indirect welfare effects) against rivals.<sup>20</sup>

The benefits of vertical separation compared to an access regime are *i*) the incentives to anticompetitive conduct in vertical relations disappear and *ii*) public and private regulation costs are expected to be lower. On the other hand, the costs of vertical separation are the possible loss of scale and scope economies, e.g. asset sharing, diluting general fixed costs, better use of specialized labor, as well as the possibility of less efficient contracts due to more complicated information problems, increased business conflict uncertainty and/or increased double markup, but empirical evidence varies strongly for different industries, countries, and firms.

Overall, the merits of vertical divestiture vary with type and competition in the retail market, integration scope economies, relative social value of consumer surplus and profits. A further point concerning vertical separation is, without full ownership divestiture, that if it is correctly implemented, the upstream company is effectively shielded from competitive market forces, if not, discrimination incentives remain.<sup>21</sup>

*Regulatory timing*

Considering dynamic efficiency, regulation biased in favor of service-based competition is likely to pre-empt efficient investments and sustainable competitive market structures. Concerning access to elements of *Next Generation Access Networks* (mainly fiber-to-the-home or fiber-coax-hybrid networks), which will be the successors of the legacy twisted-pair copper cables, the NRAs are more reluctant to impose regulation in order to keep

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<sup>20</sup> E.g. by seeking to extract rents or at least raising their costs, exaggerating input costs, or degrading the quality of the supplied input, burdensome purchasing requirements or delaying access.

<sup>21</sup> Sappington (2006).

investment incentives high and taking into account that the investments necessary are substantial and to a large part sunk in their nature, but nevertheless relevant due to investors' capital remuneration expectations.

The telecommunications industry in Germany had been regulated widely since the privatization of the formerly state-owned Deutsche Telekom and the liberalization of the telecommunications markets. Unfortunately, for a long time there has been focused on static efficiency and the NRA has seldom resisted the temptation to regulate. Fortunately, views have changed during the last years and especially the recent amendment to the telecommunications law (TKG) includes explicitly dynamic aspects, favoring a hands-off policy. On November 30, 2006, the German parliament has passed the latest amendment to the TKG. One of the core issues of the amendment that has been discussed controversially and lobbied heavily was the introduction of the § 9aTKG (especially with regard to the question whether access to the new VDSL fiber-optical hybrid network of the Deutsche Telekom AG should be regulated or not): § 9a (1) states, that new markets principally stay unregulated. § 9a (2) still allows for regulation of new markets, but only in cases that fulfill the two conditions, that there are facts that justify the assumption that without regulation the tendency towards sustainable effective competition is impeded in the long run and particularly the aspects of efficient investments in infrastructures and the promotion of innovations have been considered.

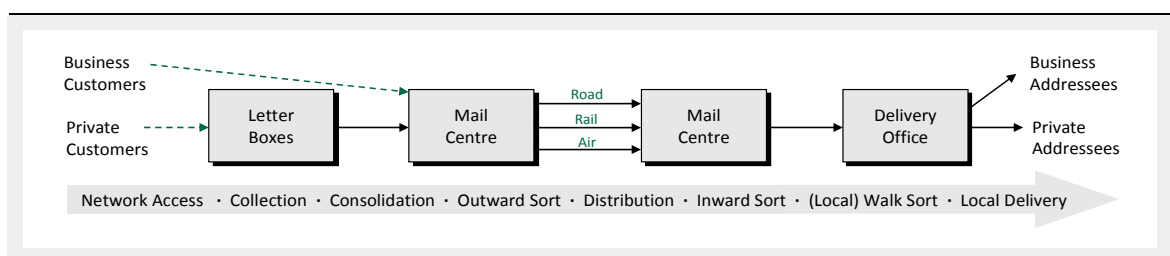
Principally this might improve the regulatory framework for telecommunications because if applied correctly, it might lead to reluctance from regulation or at least to a period of non-regulation like regulatory holidays. Critically for the effectiveness of this rule, the definition of new markets is of crucial importance. This definition is still under development, and discussed controversially and lobbied heavily. Additionally, there is an ongoing argument between the Commission and the German authorities mainly based on the European framework requirement, that there must be no tendency towards effective competition observable.

### **3.2 Application to postal markets**

Network infrastructures are not necessarily permanently connected networks. They might also consist of a set of network nodes that are connected only dynamically, like it is in the postal industry which mainly consists of road and transport/delivery capacity.

Concerning this aspect, postal distribution is completely different from physical networks like telecommunications, electricity, rail, water and so on. Postal services are provided by a sequence of activities connecting senders with receivers. The activities are collection, outward sorting, transportation, inward sorting, and delivery of postal items (cf. figure 2).

**Figure 2: Postal networks**



Source: modified from EU (2006)

The first concept for the European postal market was sketched in the European Commission's Green paper of com 1992, where it was concluded, that sector-specific regulation would be required. Today, the European framework for postal regulation consists mainly of three directives, being the Directive COM 2008/6 EC the most recent one.<sup>22</sup> This directive aims to complete the gradual opening of the postal markets to competition by 2009, or for some countries after another transitional period by the end of 2012.

Elements of the regulatory framework like in the telecommunications industry are: the promotion of competition, the development of the internal market and safeguarding or to ensure citizen interests. The EU *Postal Framework* does not impose access, but if it is mandated by the NRAs, the usual transparency and non-discrimination rules apply, and prices have to be "geared to cost". The framework also covers services of general interest and the financing thereof.

### *Economies of Scale and Scope*

Mail collection, sorting, transport and delivery access might exhibit economies of scale and represent a natural monopoly in remote areas, but economies of scale alone do not create an essential facility. Also, the scale of indivisible sunk investments should be rather low, with the possibility to lease the equipment needed, and labor cost accounting for approximately 70% of total cost.

<sup>22</sup> COM 1997/67/EC, COM 2002/39/EC, and COM 2008/6 EC (EU (1997, 2002b, 2008)).

Concerning economies of scale, the assumption of a natural monopoly is not justified. For sustainable competition to be feasible, entry must be profitable, which in turn is highly interdependent also with the proper design of universal service obligations to keep the minimum efficient size of entry low.

The estimated minimum efficient sizes of entry (the critical market share) is country- and operations-specific, ranging from 3% market share with two day per week delivery (NL) to 30% with 1 day per week delivery (UK). Actual data seems to confess these estimates, in Netherlands, two operators with a market share of 2.5% each, and in Sweden one operator with 7.5% overall share and 25% share of the market segment of presorted bulk mail for urban delivery are all profitable, like some regional branches of the Pin AG in Germany are. Sunk costs seem to occur only from full-scale or otherwise high-level entry as the high number of small licensees in Germany illustrates.<sup>23</sup>

In addition, the economies of scope are rather limited due to different transportation means (road, rail, air) depending on different qualities, and also with respect to geographic differentiation. Even companies with mail, parcels, express, and logistics operations can only share a fraction of their networks to obtain scale advantages. Therefore, the argument of the existence of entry barriers caused by economies of scope can be rejected largely.

#### *Non-replicable assets*

While in telecommunications, the (copper) local loop (of existing networks) in most cases seems to represent a natural monopoly, this is not so clear for wireless and new technology networks, especially in combination with innovative deployment technologies, which provide lower cost per added subscriber and have different service properties, e.g. the mobility of services.

In the postal industry, non-replicable network elements (and services) – if – hardly exist, and the economies of scale and scope are limited, if differentiation among service providers is allowed and not narrowed too much by regulation. The postal industry represents a production chain, of which only few segments might be candidates to have natural monopoly properties.

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<sup>23</sup> De Bijl / van Damme / Larouche (2005).

One of the unique attributes of the postal industry is, that the work can be done (at least partly) by the sender itself, e.g. (pre-)sorting or hand-over at distant point. If there is no monopolistic bottleneck, the postal (upstream) operator should probably find it in his own interest to provide access in order to keep at least a part of the revenues. This, and the vivid competition among different postal providers, the development of electronic communications, through parcels, express and logistics operators, print media distribution firms, and own efforts to distribute mail (e.g. utility companies employing own staff to deliver mail; one example for this option provides the case of Vattenfall Europe, which permanently employed several people to deliver invoices and other mail in Berlin) as well as email lead to significant competitive pressure, effectively restricting the possibilities to exercise market power.

#### *Low entry barriers*

In the postal industry, the requirements for access regulation generally are not met. There are no indivisible sunk investments, entry is easily possible at different scales, and users are free to switch their service provider, quickly and without significant switching costs.<sup>24</sup>

Low entry barriers and potential competition lead to efficient market structures and allocations (see for example parcel and express services), therefore downstream access regulation is judged to be not justified. Regulation of *worksharing*, as downstream access is called in the postal sector is not necessary, if all potentially competitive segments are open to competition. Not only in the industrialized countries, but generally, “on a national, regional, and global level, private operators are playing an increasingly important role in the provision of even the most basic postal services. As just one example of this process, in the Latin America region, incumbent universal service providers have a share of the postal marketplace estimated less than 40%, in spite of benefiting from some of the highest *de jure* protection in the world”,<sup>25</sup> providing evidence for the possibility for duplication.<sup>26</sup>

The only elements that could be identified to be susceptible to access regulation are address and mail redirection and return databases based on information asymmetry

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<sup>24</sup> Panzar (2008), p. 15.

<sup>25</sup> UPU (2004).

<sup>26</sup> Panzar (2008), pp. 6-7.

grounds,<sup>27</sup> and access to PO boxes in the operators facilities, which can be compared with the termination monopoly in the telecommunications sector. The service “full coverage delivery including PO boxes” is impossible for *any* operator, thus all operators have SMP. Especially in this case, agreement seems to exist, that this kind of access to subscribers is necessary.<sup>28</sup> For PO boxes, the possibility for freely negotiated access exists, pointing to the antitrust approach. In any case, if competition law alone is considered to be insufficient to cope with market deficiencies, non-discrimination obligations concerning freely negotiated access should be considered first.<sup>29</sup> Access regulation is justified, if a privately negotiated solution cannot be agreed upon. If regulation has to be imposed, the principles, e.g. concerning the pricing should be applied as discussed above. The view, that there are no non-replicable assets (at least in the narrow sense) was confirmed by the Court of Justice of the European Communities in the case decision *Oscar Bronner v Mediaprint* (C-7/97).

## 4 End user tariff regulation

“As a starting point, retail regulation can only be envisaged if and once it has been concluded that wholesale regulation cannot suffice to achieve the regulatory objectives set out above the retail level.”<sup>30</sup>

Basically, wholesale regulation may be insufficient, if an essential input is provided by a vertically integrated operator, which is also operating on downstream markets with imperfect competition. The underlying sources for the resulting inefficiencies are little competitive restraints from actual or potential entry, on the dynamic side strategic conduct, such as foreclosure and predation, and discrimination incentives as with regards to discrimination between other operators and between market segments.

### 4.1 Economic rationale and implementation in telecommunications

Historically, in the first half of the 19<sup>th</sup> century in the U.S., for many infrastructure industries, municipal franchise contracts administered by council subcommittees or boards

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<sup>27</sup> Panzar (2008), p. 17.

<sup>28</sup> Panzar (2008), p. 34.

<sup>29</sup> Bergman (2002).

<sup>30</sup> Brunekreeft / van Damme / Larouche / Sorana (2005), p. 12.

were used. In most cases, the franchises were not exclusive contracts, but the municipalities frequently issued duplicative franchises. Price had to satisfy the conditions to be “reasonable with reference to the costs of producing and delivering the same”, “not unreasonable or exorbitant” or “not exceeding the average rate charged by other cities”.

In telecommunications, during that time, Bell developed its long distance voice telephony system, due to protection from the basic patent from 1879 until its expiration 1893 as a full monopoly, and since then under competition of many entrants, especially in regions that had not been served by the Bell system under the American Telephone and Telegraph Corporation (AT&T) as the parent company. 1907, Bell’s president Vail started to pursue a three part strategy including mergers with independent phone companies, emphasis on basic research and patent purchases, and to embrace regulation as a way to preserve monopoly power by justifying a system without competition. 1922, the second monopoly era began, 40 of 48 states were granting the AT&T monopoly and regulating rates concerning level and structure, e.g. through geographically averaged prices, with line rental fees subsidized by usage charges, and so on. The 1934 Communications act confirmed the regulated private monopoly of AT&T and introduced federal regulation, administered by the Federal Communications Commission (FCC) which was created by the act. During the next 60 years, regulation evolved continuously, and the monopoly area was reduced significantly. On the other hand, until the 1960’s state regulators and the FCC protected AT&T’s core monopoly.

After minor steps from the “Commission price setting system”, in the 1960’s, price regulation gradually became cost-oriented, using a cost-plus approach or rate of return regulation, although still the individual state Public Service Commissions shared this task with the FCC. In this *Rate of Return era*, prices were set by the different regulatory bodies focusing on profit regulation. Focusing prices and underlying costs instead of profits from the 1980’s on, incentive regulation in the form of price cap regulation tried to introduce additional incentives to increase cost efficiency and to allow higher pricing flexibility, with a growing tendency in the 1990’s. Since then, the FCC reregulated retail pricing and implemented different versions of end user tariff regulation.<sup>31</sup> Finally, the 1996 Communications act not only ended the second monopoly era of AT&T, introduced the whole set

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<sup>31</sup> Federal Communications Act (1994), treatment of mobile services. Second report and order, 9 F.C.C.R. 1411, Sections 3 and 332, para 12, 14-16; and Federal Communications Act (1996) 47 U.S.C. §§ 251-252.

of today's requirements including unbundling, resale obligations etc., but also implemented the forward-looking cost orientation concept (TELRIC) as it is still used today.

In Europe, as in the U.S., telecommunication services were provided by vertically integrated monopolists for equipment, and basic network and service provision. Different was, that these monopolies in Europe mainly were run as public entities. The national telecommunications operators at the same time were policy-makers under direct control instead of being a regulated firm. Performance varied across Europe.<sup>32</sup> From the 1990's on, the markets for equipment, value-added services, mobile services, basic services, and lastly infrastructure networks were liberalized. The national operators were restructured, corporatized and (partly) privatized, and independent regulatory authorities were installed. Prices were set by newly established NRAs. The evolution of price regulation towards incentive-controls in the EU preceded mostly the privatization process: Price-cap regulation first was applied to telecommunications 1985 in UK.<sup>33</sup> The two most important approaches for price regulation were cost plus and price cap regulation.<sup>34</sup>

#### *Rate of Return (cost plus) regulation*

Under RoR regulation, the regulated firm is only allowed to recover the costs and to achieve a "fair" rate of return on capital. In practice, this requires an enormous amount of data to set prices - under rate of return regulation the regulator additionally sets the prices for all of the goods and services provided by the regulated firm besides its rate of return.<sup>35</sup> Although they are in principle set such that distortion of consumer behavior is minimized, usually the regulated firm provides universal service and the retail prices are regulated also to achieve social goals, e.g. urban-rural and usage-fixed cross-subsidization.

Overall, the revenue requirement has to be calculated as the sum of the operating expenses, depreciation, taxes and the RoR times the eligible asset base. It has to be noted, that the costs are the actual embedded costs, not forward-looking costs. For calculating the revenue requirement including a "fair" RoR, multiple difficulties arise: *i*) in multipro-

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<sup>32</sup> For example, in France the *Minitel*, or *ISDN* in Germany were considered to have been considerably successful, whereas the *Bildschirmtext* system in Germany never reached significant market penetration.

<sup>33</sup> Hausman (1991), p. 8.

<sup>34</sup> Bergman (2004), p. 19.

<sup>35</sup> Guthrie (2006), p. 930.

duct firms, the asset base and costs have to be allocated to the different products, which is further eschewed if accounting rules for public entities apply and *ii*) the calculation of the cost of equity becomes central.<sup>36</sup>

### *Price Cap regulation*

Worldwide, the implementation of price caps uses long-run forward-looking cost estimations based on a hypothetical efficient firm or (more rarely) benchmarking. This approach allows the regulated firm to adjust its own prices subject to the weighted average of prices not exceeding a defined cap. Because the prices are disconnected from actual costs and the price ceiling is fixed for a certain period of time, the firms can keep additional profits from cost savings, and therefore price cap regulation provides effective incentives to lower costs.<sup>37</sup>

Flipside of the coin is, that this incentive also leads to quality reduction incentives, as can be illustrated, e.g. with a case in UK, where severe phone booth maintenance problems arose. To achieve service quality targets, often the incorporation of service quality assessments, or quality provision sanctions or incentives (which allow higher prices for better services) shall encounter this, but require co-regulation.

Another disadvantage is the danger of regulatory taking. Examples include the lowering of the price cap ex post in order to take the profits from the regulated firm, if they were considered as excessive. In addition to the drawback, that unexpected cost increases have to be borne by the firm, it further increases their risk expectations, which in turn leads to even higher necessary expected profit margins for investment than in cost-plus regimes required.<sup>38</sup>

To achieve the inflation-adjustment of prices over time, besides the choice of the measure of the rate of inflation in the goods purchased by consumers (either Retail Price Index (RPI) or Consumer Price Index (CPI)), the X-factor to reflect productivity developments

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<sup>36</sup> Cf. e.g. Lamdin (2003).

<sup>37</sup> Sappington (2002), p. 3.

<sup>38</sup> “Given that firms are more risk averse than the buyer (perhaps the government or the collective of all consumers), this risk transfer is in itself inefficient. It follows that the optimal regulation can then be seen as a trade-off between an efficient risk allocation and good incentives for cost control (the “incentive - rent extraction trade-off”).“ Bergman (2004), p. 19.

plays an essential role in price cap regulation.<sup>39</sup> The design of this factor might increase policy credibility and reduce regulatory capture, if it employs the productivity gains relative to other sectors in the economy and input price inflation in a way, such that discretionary options for the NRA are limited effectively, and regulatory uncertainty, the probability of renegotiation attempts and other might-be rent-seeking activities are reduced.

#### *Additional pricing requirements*

All legislations include elements on universal service, and the related pricing. Examples for politically motivated price controls include uniformity obligations and the definition of “affordability”, or related special tariffs for low-income users. Thereby, the current framework in the EU exhibits some contradictions, which have to be solved during the ongoing update process. For example PTS, the Swedish NRA, claims, that the European framework imposes incompatible demands for legislation on the member states: uniform tariffs and prices geared to cost at the same time would be infeasible under most conditions.

In practice, a mixture of price caps and rate of return regulation (based on cost models) can be observed. In addition, discretionary ex ante approvals by the NRA and structural requirements (uniform prices) apply and ex post supervision of prices concerning price cost margins and price cost squeezes is in place (cf. table 2). Due to the complex dependencies within these regulatory systems, regular adjustments to changing competitive environments are necessary, e.g. concerning the baskets, prices, or market definitions.

**Table 2: Retail price regulation of telecommunication services in selected countries**

Country	Telecommunications service regulation (2007)
Canada	Price cap or prior approval with SMP, optional utility segment services
Germany	Price cap for SMP market segments, three baskets (voice, fixed, mobile)
Netherlands	Price cap for SMP operators (voice and leased lines)
Sweden	Cost plus for fixed network access and capacity, price cap for leased lines
United Kingdom	Only ex post control
United States	Price cap on SMP operator

Source: OECD (2007), ITU Regulatory Database

<sup>39</sup> Cf. Baake / Wey (2007).

At the moment, the regulatory framework is under development to meet the challenges from buzzword processes like the deployment of next generation networks or media convergence and the related increase in the use of bundling in the telecommunications industry. UK still is at the “deregulatory forefront”: After the vertical divestiture of BT into OpenReach (upstream) and BT (downstream/retail division), Ofcom removed on July 31st 2006 after 22 years all retail price controls.<sup>40</sup>

*Remaining drawbacks and caveats*

Comparing the regulatory regimes of PCR and RoRR, functions and incentives, it quickly gets clear, that the two approaches have few in common, despite the aim to prevent the exercise of market power and to correct the associated socially inefficient prices.

Scientific studies tried to examine the effects of incentive regulation: “In summary, the studies to date provide varied evidence regarding the impact of incentive regulation on performance in the U.S. telecommunications industry. Incentive regulation appears to increase the deployment of modern switching and transmission equipment, to spur an increase in total factor productivity growth, and to foster a modest reduction in certain service prices. There is little evidence, though, that incentive regulation leads to a significant reduction in operating costs. There is also little evidence of a systematic decline in service quality under incentive regulation.”<sup>41</sup>

Design and implementation of regulation often could take a wider perspective on long-run efficiency and include product innovation, process innovation and intermodal competition appropriately. If quality is of concern, introducing adequate incentives for service quality as suitable modifications of price cap plans can be implemented in addition to potentially existing standard price cap regulation in a variety of ways.<sup>42</sup>

In competition suits, the definition of predation is of highest importance to distinguish between competitive and anti-competitive behavior. The four criteria to be assessed are, *i)* whether the retail prices are below a certain level, *ii)* whether with intention to drive competitors out of the market, *iii)* whether with the aim to raise future prices, and *iv)* whether there exists an acceptable efficiency defense.<sup>43</sup> Often, the first criterion is

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<sup>40</sup> Ofcom (2006).

<sup>41</sup> Sappington (2002), p. 78.

<sup>42</sup> Sappington (2002), p. 25.

<sup>43</sup> Brodley et al. (2000), p. 2241.

used for a first assessment; thereby “hard-to-match prices” can easily qualify as anti-competitive at a first glance. Thereby, neither rate of return regulation nor price caps are designed to deal with anticompetitive effects (cf. sect. 2.3.2) or to include other goals such as “affordable uniform prices” or social tariffs.

*Predation, pre-emption and foreclosure incentives remain*

“Although pricing flexibility can enable an incumbent supplier to respond to competitive pressures and thereby prevent operation by a higher-cost rival, the flexibility can also serve to undo cross-subsidies that regulators have implemented to promote equity, fairness, and/or other political objectives.”<sup>44</sup>

To deter abusive practices on final consumers and competitors, still competition policy and strict enforcement is needed. Over time, predatory pricing, leveraging, foreclosure, tying, pure bundling, refusals to deal, undue cross-subsidization, and raising rivals’ costs strategies were engaged to monopolize markets, with the intention to pre-empt entry or drive competitors out of the market.<sup>45</sup> The pricing flexibility might be used implicitly for cross-subsidization, either horizontally (downstream) or vertically to downstream. The result might be a “margin squeeze”, which denotes a reduction of the margin between wholesale and retail charges by a vertically integrated dominant operator so as to make entry difficult or to encourage exit.<sup>46</sup> This margin squeeze imposes additional efficiency constraints on the competitors which the incumbent’s retail branch does not have to fulfill.<sup>47</sup>

The formalization of such cases might happen either as margin squeeze or predatory pricing cases. Generally, while wholesale caps usually are based on production costs in competition policy cases, the retail floor levels might reflect production costs, economic value or benchmark prices.<sup>48</sup> Case law is mainly shaping also national competition policy in this area. Generally, fines depend on gravity and duration plus (or minus) aggravating (or at-

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<sup>44</sup> Sappington (2002), p. 24.

<sup>45</sup> For an overview, cf. Spulber (2002).

<sup>46</sup> Geradin / O’Donoghue (2005), p. 356.

<sup>47</sup> European Commission, in DT case, OJ 2003 L 263/9, para 140.

<sup>48</sup> C.p. Haag / Klotz (1998).

tenuating) circumstances.<sup>49</sup> Within the EU, national competition law proceedings were launched in numerous countries, e.g. in Denmark, France, Italy, the Netherlands, and UK. The cases *Deutsche Telekom*, *Wanadoo*, and *Telefónica* were the most important precedents for price abuses (respective margin squeeze and predatory pricing) under art. 82 EC treaty.<sup>50</sup> In Australia, pricing behavior with retail prices below wholesale prices was observable.

In telecommunications, additionally *pure bundling* and *exclusion* are of concern, which both reflect the possibility to leverage market power from an SMP-product to a non-SMP product, as e.g. the bundling of access and services in telecommunication networks, which can be dealt with securely through competition policy, if the consequences are not irreversible and sufficiently severe.<sup>51</sup>

## 4.2 Application to postal markets

Concerning end user tariff regulation, conceptually the same problems as in telecommunications are likely to arise. As in telecommunications, price regulation in practice is implemented as a mixture of different approaches for different segments of the postal market (cf. table 3). The effectiveness of price regulation might be limited by universal service obligations, especially in combination with hybrid or partial competition. Universal service obligations in effect may restrict differentiation possibilities and require consistent market definitions which make highly differentiated products or networks problematic to be handled by the regulatory framework.

Protecting end users, intermodal competition by e-mail, fax, telephone, short messages etc. is yet a strong disciplining market force which limits excessive pricing. Additionally, postal service pricing is somehow simpler than telecommunications pricing, because for private customers in most cases only linear tariffs apply, which in turn leads to increased market transparency. Furthermore, provider switching costs are very low because there are no subscriber contracts, attributes which both are likely to restrict prices furthermore.

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<sup>49</sup> According to: Guidelines on the method of setting fines imposed pursuant to Article 15 (2) of Regulation No 17, OJ C9, 14.1.1998, point A.

<sup>50</sup> EU (2003a, 2003b). For an overview over national cases in the telecommunications sector see Geradin / O'Donoghue (2005), p. 355.

<sup>51</sup> Brunekreeft / van Damme / Larouche / Sorana (2005), p. 63.

Facing the fact, that today more than 87.5% of letter post items (EU wide) are sent by businesses and organizations rather than individuals; the business to consumer (B2C) segment of the letter post now accounts for 62% of total volume.<sup>52</sup> This market concentration on the sender side might also limit prices because of their option to scale to replicate the postal network.

**Table 3: Retail price regulation of postal services in selected countries**

Country	Postal service regulation (2007, DE: 2008)
Canada	Price cap or single price approval, basic letter rate and single piece mail, notification in advance, multi-year pricing plan approval
Germany	Price cap for SMP operators with ex ante approvals of single prices, bulk mail above 50 items/mailing excluded, efficient cost concept
Netherlands	Price cap with two baskets (all products and small users), uniformity obligations
Sweden	Cost orientation and uniformity required, only domestic letter rate regulated, otherwise free to set prices if compliant with competition rules
United States	Price caps and floors, increases limited by CPI, notification in advance, ban on below-cost pricing

Source: IPC Regulatory Database

With the ongoing liberalization process, tariff regulation usually only was introduced for universal services and the legal monopoly of the reserved area and the potential to withdraw stringent tariff regulation raises. Accordingly, in Netherlands, the regulatory focus shifted from the whole postal market to small users and led to the introduction of a further price cap basket to reduce the regulated market segment. In Germany, regulation applies partly only up to 50 items per sending and in Sweden only the domestic (single) letter rate is directly retail price regulated.

Safeguarding competition is likely to be achieved by ex post control based on competition policy.<sup>53</sup> For margin squeezes as in telecommunications, the dominant operator must be *i)* vertically integrated, *ii)* the input must be essential, and *iii)* the input must constitute a relatively high proportion of the downstream/total cost. For such a margin squeeze being judged anti-competitive, it depends furthermore on *iv)* the imputation results and the definitions of “*reasonably efficient service provider*” and “*normal profit*”, on the possibility of *v)* an efficiency defense providing a reason other than strategic anti-competitive behav-

<sup>52</sup> EU (2006), p. 56.

<sup>53</sup> Panzar (2008), p. 19.

ior, e.g. achieving critical masses through introductory offers, and *vi*) harmful effects on consumers and substantial negative effect on competition have to be proven. Due to the low entry barriers to postal markets, also predatory pricing becomes unlikely, because the short-run losses from such strategies are unlikely to be compensated in the future. Therefore, ex post price control based on competition policy should be sufficient.<sup>54</sup>

## 5 Conclusions

Assessing the regulation of telecommunications markets from the postal sector perspective, the main conclusion is, that regulation of postal markets should not follow the regulatory policies used for telecommunications markets. The experience from access and price regulation of telecommunications industries is problematic: Access regulation and wholesale obligations distort investment decisions and spur service based competition. In the longer run, this might lead to inefficiencies from the lack of investment into innovations and concerning intermodal competition.

Especially in the most open markets, dynamic reform processes have resulted not only in greater efficiency of postal operators but also in a market which focuses more and more on the interests of the customers.<sup>55</sup> Reorganization, consolidation and diversification are continuing, and low cost business models are developing. Analyses of market shares of competitors as well as the subjective perception of key players confirm that in cases where the monopoly has been completely abolished or substantially reduced, real competition is emerging.

Generally, in the postal industry there are neither non-transitory entry barriers of structural or (with the abolishment of the reserved area) legal nature, nor does the market do not tend towards effective competition over time. In addition, most problems can be addressed sufficiently by competition law alone. Hence, there is only limited scope for regulation, and regulation should focus on competitive bottlenecks with proportionate remedies applied in a punctual fashion. If structural bottlenecks are symmetric, regulation should prefer market-based negotiation outcomes to symmetric rules, which should allow for end-to-end competition on a level playing field.

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<sup>54</sup> Panzar (2008), p. 19.

<sup>55</sup> EU (2006), p. 57.

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