

# Reference Framework for Analyzing Targeted Competitive Tendering in Public Transport

Didier van de Velde

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**Summary:**  
The report presents an analytical framework for analyzing targeted competitive tendering for passenger transport. The aim of the report is to establish a framework for comparative analyses of the most significant characteristics of different regimes in Europe, in order to discuss the relevance of experiences in different countries. Such variations are explored through the concept "organisational forms", drawing a distinction between authority initiated and market initiated regimes, and the division of responsibility related to strategical, tactical and operational level.

**Titel:** Analytisk rammeverk for undersøkelser av målrettet bruk av konkurranseutsetting av persontransporttjenester

**Forfatter(e):** Didier van de Velde

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**Sammendrag:**  
Rapporten presenterer det analytiske rammeverket for prosjektet "Målrettet bruk av konkurranseutsetting av persontransporttjenester". Formålet med rapporten er slik å etablere et rammeverk for å kunne få en strukturert kartlegging av de viktigste institusjonelle rammebetingelsene for ulike former for konkurranseutsetting gjennom en klassifisering av ulike organisasjonsformer slik disse kan observeres i kollektivtransport i Europa. Et sentralt skille er mellom regimer med hhv markeds- og myndighetsinitiativ, og de ulike roller myndighetene spiller innen slike regimer. Et annet skille referer til ulike nivå for planlegging og kontroll innen kollektivtransport: strategisk, taktisk og operativt nivå.

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# Foreword

This report presents a reference framework for analyzing targeted competitive tendering in public transport. The work is financed by the Ministry of Transport and Communications within the strategic research programme on transport.

The framework is a development of the work carried out by the author within the EU projects MARETOPE and ISOTOPE.

Oslo, October 2004  
Institute of Transport Economics

*Sønneve Ølnes*     *Arild H. Steen*  
deputy manager     head of department

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## Summary

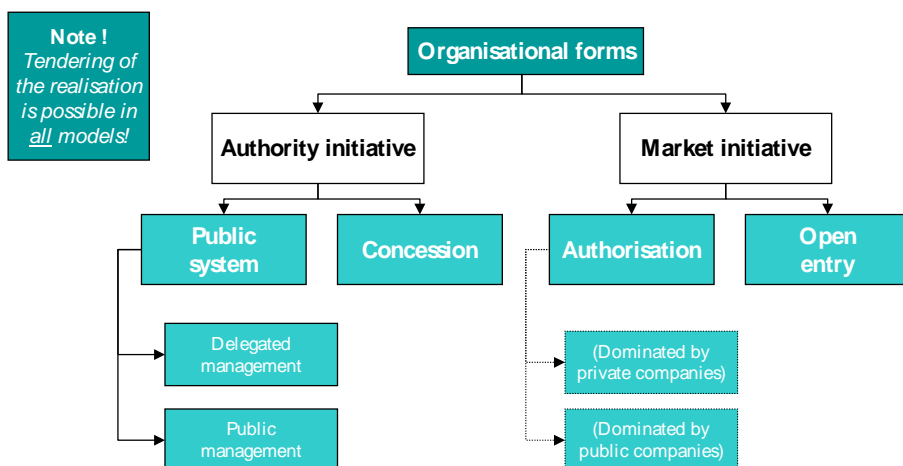
# Reference Framework for Analyzing Targeted Competitive Tendering in Public Transport

This report provides the reference framework developed to be used within the project; Targeted Competitive Tendering in public transport (*Målrettet bruk av konkurranseutsetting av persontransport-tjenester*). This framework, originally developed by the author within the EU-projects MARETOPE and ISOTOPE, is here further developed for this TØI-project.

In the first chapter, the report provides a brief introduction to reasons, due to economic theory, for state intervention in the transport sector, in terms of concepts like market failure, externalities and network externalities.

Following Williamson, one can make a distinction between four levels of institutional analysis; i) the level of social embeddedness; ii) the level of institutional environment (“the rules of the game”), in this report further elaborated as a distinction between a legal and a regulatory level; iii) the institutions of governance (“the play of the game”); and iv) the level comprising choices of output and prices and agency theory. The core of this report and hence of the conceptual framework refers to the third level, institutions of governance, in this framework conceptualised as organisational forms.

Figure S.1 presents a global classification of organisational forms as can be encountered in public transport in Europe. The first distinction presented in the diagram is the dichotomy between ‘authority initiative’ and ‘market initiative’. This distinction refers to two fundamentally different categories of organisation of the supply of public transport services and relates closely to the legal framework within which services are meant to appear. In authority initiated regimes, those authorities which have received the responsibility for transport (further called ‘transport authorities’) have the *legal* monopoly of initiative. This means that autonomous market entry is legally impossible and that all production or market entry is the result of a conscious one-sided authority initiative to produce or request the production of services (this is, e.g., the current legal situation in local passenger transport in France outside the Paris region). In market initiated regimes, the supply of transport services is based upon the principle of autonomous market entry resulting from a market process with more or less regulatory checks at the entrance (this is the current legal situation in local passenger transport in Great Britain – with much freedom – and in Germany and the Netherlands – with less freedom).



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Figure S.1: Organisational forms in public transport

In short, the main distinction is between the organisational forms where the right to initiate the creation of passenger transport services is reserved to the authority, who can then delegate it, and those organisational forms where this right lies “in the market”, for any one to grab.

It should be noted that *all* regimes presented in this figure can make use of competitive tendering to contract out parts or whole of their activities. This stresses that competitive tendering is merely a selection mechanism in the context of outsourcing, it is a method of production available to any initiator of services whatever the organisational form, but it is not an organisational form in itself.

Authorities can play several roles, both in market initiative regimes and in authority initiative regimes:

- *Licensing authority*: to assess the compliance of potential operators with technical standards and the fulfilment of juridical requisites (i.e. granting access to the profession) in all regimes,
- *Authorising authority*: to judge the desirability of actual market entry by autonomous licensed operators (i.e. granting access to the market in market initiative regimes),
- *Concessioning authority*: to take the initiative to create a transport service concession and to select (by competitive tendering or otherwise) a licensed operator for the concession (i.e. granting access to the market in authority initiative),
- *Regulatory authority*: setting the ‘rules of the game’ for operators present on the market, together with the actual *watchdog* or *referee* monitoring and enforcing the rules of the game in all regimes,
- *Enterprising authority*: when the authority creates and bears the entrepreneurial risks on transport services she creates either by owning a public transport company (or non-corporatised internal division producing transport services) or by outsourcing the production of services she has designed. This either under authority initiative (legal public monopoly) or under market initiative (the services created by the authority have to be granted an authorisation by the authorising authority), and
- *Subsidising authority*: for two purposes: stimulate the general supply of services and redistributing wealth to politically chosen target groups in society (such as handicapped, elderly, unemployed,...).

It is important to state that the classification presented above only represents a number of ‘pure organisational

forms’. Few real-world examples will fully correspond to any of these organisational forms. Only a careful reading and understanding of the legal, regulatory and organisational frameworks will be able to deliver the necessary information to position each real-world organisational form in relation to these ‘pure organisational forms’. Intermediate forms may be desirable, are possible and do exist in reality. In real world cases, ‘delegated management’ and ‘concessioning’ can also sometimes be observed in combination with each other, all depending on the sharing of risks between authority and operators. ‘Two step regimes’ can also be observed. In market initiative regimes, e.g., the authority can be given a role as complementary initiator of (social) services, such as in the British bus sector. Such services are then however outsourced to private operators selected by competitive tendering. A combination in the reverse order is also possible and is encountered in Britain in the railway sector. A different version of the combination of market initiative with authority initiative is also present in the current German local passenger transport legislation. According to the principles of that legislation autonomous market entry regulated by a system of authorisation provides for all profitable services. Additional non-profitable services can then be provided but have to be tendered by the responsible transport authority. However, as in Germany, legal principles do not always correspond to the reality as various subsidies and cross-subsidies blur the distinction between profitable and non-profitable services. Finally, an often observed confusion is that between authorisation regimes dominated by authority-owned companies and public management under authority initiative regimes. While these forms do indeed function similarly in practice, they are based on fundamentally different legal regimes. In a context of change, and for the analysis of the barriers to change, it is essential to distinguish clearly between law and practice there were relevant. In some cases practices will be easier to change than the law, in other cases changing the law will be the only way for practices to evolve.

## Levels of planning and control in public transport

Public transport is a service provided on a market; i.e. there is a supply, there is a demand and there is a price – even low or subsidised – to be paid to use the service. Similarly to other markets for goods or services and whatever the legal and regulatory setting,

a number of decisions will have to be made before passenger transport services can actually be produced and sold. It is generally accepted that planning and control systems within companies can be divided into hierarchically ordered types of activities, we will use here the following denominations:

**Strategic level:** strategic planning is involved in the formulation of general aims and in the determination in broad terms of the means that can be used to attain these.

*In short: what do we want to achieve?*

**Tactical level:** tactical planning is about making decisions on acquiring means that can help reaching the general aims, and on how to use these means most efficiently.

*In short: what product can help us to achieve the aims?*

**Operational level:** makes sure the orders are carried out, and that this happens in an efficient way.

*In short: how do we produce that product?*

Figure S.2 translates these to the public transport sector, without yet referring to any specific legal or regulatory setting (this example refers to a simple bus networks for small-scale cities; terms would obviously be longer when fixed infrastructures are involved):

In opposition to the *hardware* side, which is the production of vehicle-kilometres, we define the *software* side as everything that will help to *sell* the vehicle-kilometres, i.e. transforming them into passenger-kilometres. Seen from a dynamic perspective, there has of course to be a feedback between the decision levels involved, notably based on the feedback provided by (potential) clients. It should be noted that the strategic, tactical and operational levels considered here are seen from the point of view of the appearance of transport services to the passenger, i.e. at the system level, *and not* from the point of view of a specific (private) transport operator involved in production somewhere in the chain of actors, i.e. at the actor level. Indeed, any such actor will have its *own* strategy, tactics and operations and these should not be confused with what is presented above.

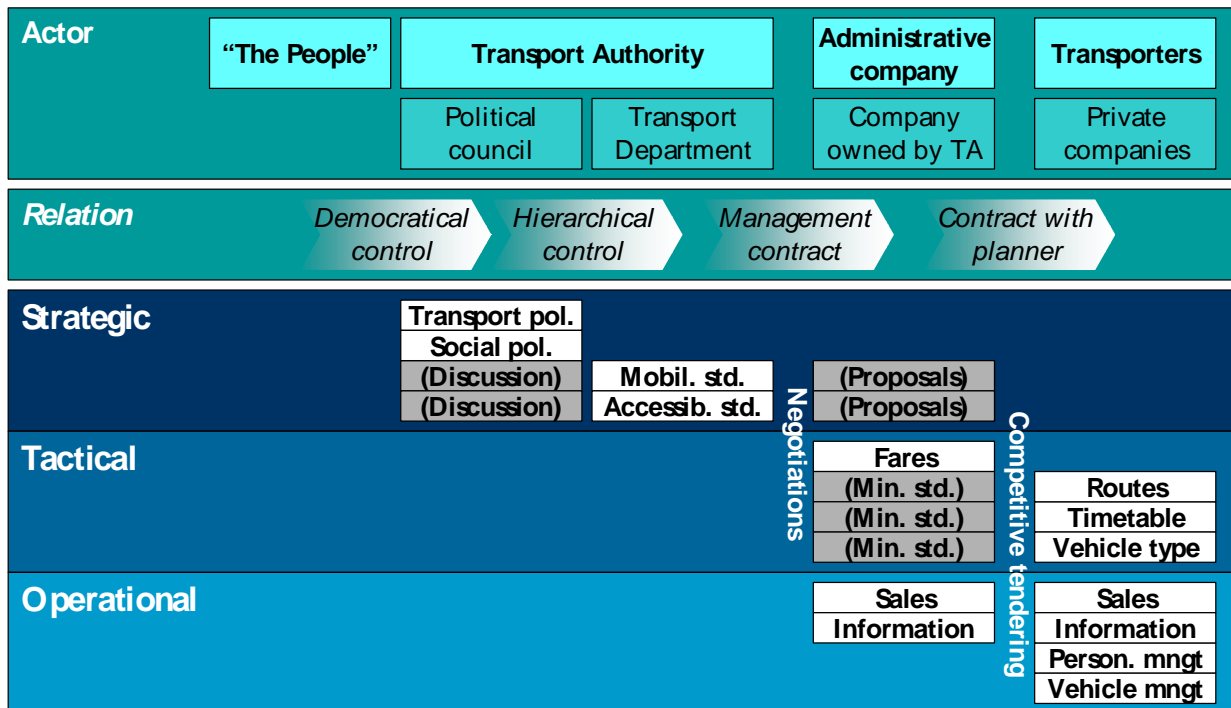
Level	General description	Decision	
		“Software”	“Hardware”
<b>Strategic</b>  Long term (5 year)	<i>What do we want to achieve?</i>	<b>General goals</b> Transport policy Market share Profitability <b>General description of the services</b> Area Target groups Intermodality	
<b>Tactical</b>  Medium term (1-2 year)	<i>Which services can help to achieve these aims?</i>	<b>Detailed service characteristics</b> Fares Image Additional services Vehicles Routes Timetable	
<b>Operational</b>  Short term (1-6 months)	<i>How to produce these services?</i>	<b>Sales</b> Selling activities Information to the public ...	<b>Production</b> Infrastructure management Vehicle rostering and maint. Personnel rostering and mngt

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Figure S.2: Levels of planning and control in public transport

As for any production, one or several actors can be responsible for each of the decisions presented in the table. In general the strategic-tactical-operational chain can be seen as a (series of) principal-agent chain(s). Numerous forms of organisation of this chain of principal(s) and agent(s) are possible. Using the levels of planning and control as presented above, together with the insights provided by the classification of organisational forms, it becomes possible to draw graphical representations of both existing and conceptual organisational forms in public transport. The focus here is on the role of the authority (or

authorities) as concessioning authority, taking the initiative for the creation of services and heading the chain of actors, and in its role of authorising and regulatory authority when controlling market initiative. Examples can illustrate that the contracting out question is present at two different levels: for the link between the strategic and the tactical level and for the link between the tactical and the operational level. Only one example (Figure S.3) will be given here (further illustrations and explanations can be found in the report).



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Figure S.3: Tendering of the realisation with re-design incentives in sub-areas

In many cases decisions pertaining to one topic, such as fares or routes, will not be attributed totally to solely one actor. As far as fares are concerned, it is possible to observe that a political council wants to retain decision power on maximum average fare increases, sometimes even on fare levels, that the fare structure is determined by a co-ordinating body charged with public transport planning and that the actual fare level is determined by the transport operators within the limits set by the other actors. This could also be included in the graphs.

Organisational forms in public transport evolve. Figure S.4 is one way to represent this graphically as far as the levels of planning and control are concerned.

This does not include the financial side however. This figure depicts, *as an example only*, the following evolution:

- The starting point is a publicly-owned operator who is subject to a diffuse authority influence which takes mostly place at the tactical level (fares, bus stops, routes) and to a lesser extent at the strategic level (social aims for the public transport services).
- The first step entails a refocussing of the authority's intervention to the strategic level (specifying the aims of the public transport system rather than the means) and leaving more design



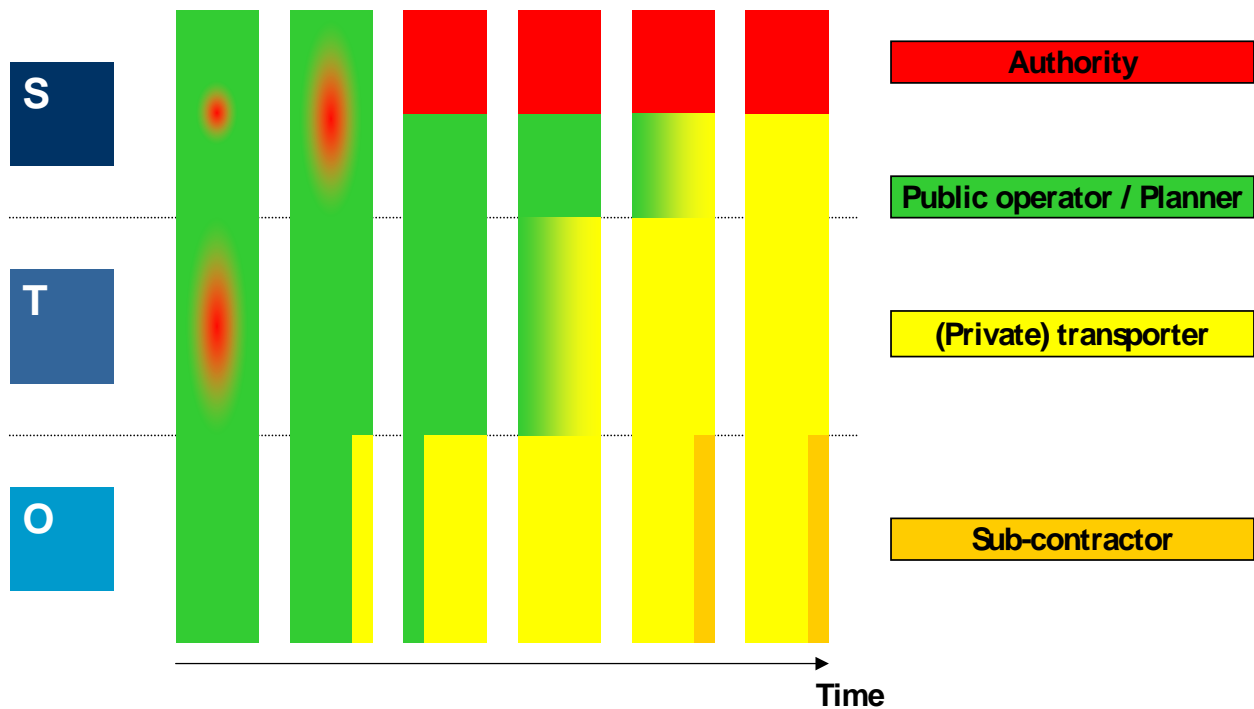
freedom to the operator. No contract exists yet between authority and operator. The operator is also requested to contract out parts of its services by competitive tendering to different transporters in order to get a comparison point for productive efficiency and induce an efficiency campaign within the public operator's organisation.

- The second step entails a contractualisation of the relationship between the authority and the publicly-owned operator. At the same time a growing share of its production is sub-contracted to competitively selected transporters. The publicly-owned operator gradually becomes a planning organ with less and less own production.
- The third step entails a transfer of some service planning powers to the competitively selected transporters. The planning organ continues to set a number of co-ordinating rules to guarantee service integration between the selected transporters.
- The fourth and fifth step entail further transfers of planning powers to the transporters. The planning

body becomes obsolete. The transporters are requested/allowed to sub-contract parts of their production if they so wish.

This is only an example, but the first three or four bars are adequate representations of the evolutions that have taken or are taking place in Denmark, Sweden and in London.

The main emphasis in the report is the classification of various forms of organisational forms, of which only a few have been touched upon in this summary. However, the report is concluded by a fifth chapter, presenting elements for further analysis of relations between actors, in particular contractual relations; principal-agent theory, risk division in terms of net-cost and gross-cost contracts, ownership versus usage and fixed versus flexible planning.



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Figure S.4: Evolution of organisational forms

Sammendrag:

# Analytisk rammeverk for undersøkelser av målrettet bruk av konkurranseutsetting av persontransporttjenester

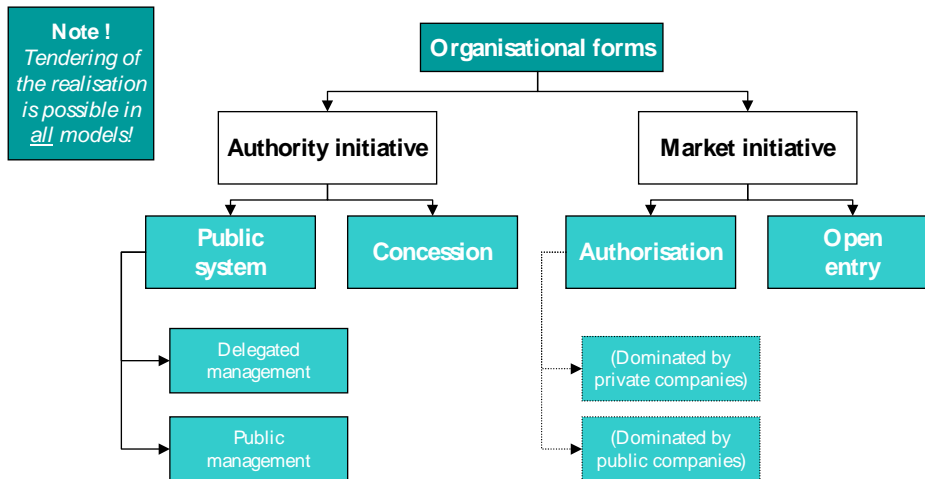
I denne rapporten presenteres det analytiske rammeverket som er utviklet innen og for prosjektet ”Målrettet bruk av konkurranseutsetting av persontransporttjenester”. Dette rammeverket, som opprinnelig er blitt utviklet av forfatteren innen EU-prosjektene MARETOPE og ISOTOPE, er her videreutviklet for bruk innen dette TØI-prosjektet. Formålet med dette rammeverket er å analysere og drøfte erfaringene med ulike former for konkurranseutsetting og overførbarheten av slike erfaringer til norske forhold. En slik drøfting må ta hensyn til de institusjonelle rammebetingelsene i hvert enkelt land. Formålet med denne rapporten er å få en strukturert kartlegging av de viktigste institusjonelle rammebetingelsene for ulike former for konkurranseutsetting.

Innledningsvis i rapporten presenteres kort noen av de grunnene som en, med bakgrunn i økonomisk teori, kan anføre for statlig intervensjon i transportsektoren. Videre gis en kortfattet presentasjon av ulike nivåer i institusjonell analyse; 1) generelle kulturelle trekk i et samfunn, 2) de institusjonelle omgivelser i form av lover og reguleringer (”spillereglene”), 3) styringsinstitusjoner/ organisasjonsformer, og 4) kontraktsrelasjoner mellom ulike aktører.

Organisasjonsformer er kjernen i det analytiske rammeverket i denne rapporten; Figur S.1 presenterer en klassifikasjon av organisasjonsformer slik disse kan observeres i kollektivtransport i Europa. Det første skillet som blir presentert i dette diagrammet er mellom ”myndighetsinitiativ” og ”markedsinitiativ”. Dette skillet refererer til to fundamentalt ulike kategorier for organiseringen av tilbudet av kollektiv-

transport som er nært knyttet til lovverket. I regimer med myndighetsinitiativ er det de myndigheter som har fått ansvaret for persontransporttjenester (heretter kalt transportmyndigheter) som har det legale monopoliet på initiativ. Dette innebærer at enhver produksjon eller markedsadgang er resultat av et bevisst, ensidig myndighetsinitiativ for å produsere eller bestille produksjon av tjenester (dette er for eksempel den nåværende legale situasjonen innen lokal persontransport i Frankrike utenfor Parisregionen). I regimer med markedsinitiativ er tilbudet av transporttjenester basert på prinsippet om autonom markedsadgang som resultat av en prosess med mer eller mindre sterke reguleringer av denne (som er den nåværende legale situasjonen i lokal persontransport i Storbritannia – med stor frihet – og i Tyskland og Nederland – med mindre frihet).

Kort sagt, det viktigste skillet er mellom, på den ene siden, de organisasjonsformer der retten til å initiere etableringen av persontransporttjenester er reservert myndighetene som kan delegere denne retten, og på den andre siden, de organisasjonsformer der denne retten ligger “ i markedet” for den som ønsker å bruke den. Det bør understrekes at *alle* regimer som er presentert i figuren kan benytte konkurranseutsetting for deler av eller hele aktiviteten deres. Slik sett er konkurranseutsetting i første rekke en seleksjonsmekanisme og en produksjonsmåte som er tilgjengelig for enhver med ansvar for tjenesteproduksjon uansett organisasjonsform, men det er ikke en organisasjonsform i seg selv.



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Figur S.1: Klassifisering av organisasjonsformer

Myndigheten kan spille ulike roller, både innen regimer med markedsinitiativ og innen regimer med myndighetsinitiativ:

- *Lisensmyndighet*: Vurdere om mulige operatører tilfredsstillende tekniske standarder og juridiske krav (dvs. gi adgang til bransjen innen alle regimer).
- *Autoriserende myndighet*: Vurdere ønskeligheten av faktisk markedsadgang for selvstendige operatører med lisens (dvs. gi markedsadgang i regimer med markedsinitiativ).
- *Konsesjonsmyndighet*: Ta initiativ til å etablere en konsesjon for transporttjeneste (ved anbud eller lignende) og å velge en lisensiert operatør til konsesjonen (dvs. gi markedsadgang i regimer med myndighetsinitiativ).
- *Regulerende myndighet*: Etablere "spilleregler" for operatører på markedet, sammen med faktisk tilsyn med og gjennomføring av reglene innen alle regimer.
- *Foretaks-/bedriftsmyndighet (Enterprising authority)*: Når myndigheter skaper og bærer de bedriftsøkonomiske risiki ved de transporttjenester de har etablert, enten ved å eie et offentlig transportselskap eller ved bruk av en intern enhet som produserer transporttjenester eller ved *outsourcing* av de tjenester de har etablert. Dette kan være tilfellet både under myndighetsinitiativ (legalt offentlig monopol) og under markedsinitiativ.
- *Subsidierende myndighet*: For å stimulere den generelle etterspørselen etter tjenester og for å omfordele til politisk utvalgte målgrupper (som handikappede, eldre og arbeidsledige).

Det bør fremheves at den klassifikasjonen som er presentert ovenfor bare representerer et knippe "rene

organisasjonsformer". Få eksempler i den virkelige verden vil fullt ut korrespondere med noen av disse organisasjonsformene. Bare en nøyaktig gjennomgang av de legale, regulerende og organisatoriske rammeverkene vil fremskaffe tilstrekkelig informasjon til at en kan plassere hver virkelig organisasjonsform i relasjon til disse "rene organisasjonsformer". Mellomformer kan være ønskelige, er mulige og eksisterer i den virkelige verden. I virkeligheten kan "delegert management" og konsesjoner bli observert i kombinasjon med hverandre, avhengig av fordelingen av risiko mellom myndighet og operatør. "To stegs regimer" kan også observeres. I regimer preget av markedsinitiativ, for eksempel, kan myndighetene bli gitt roller som komplementær initierer av (sosiale) tjenester, som i den britiske bussektoren. Slike tjenester er da konkurranseutsatt til private operatører som er valgt ut på grunnlag av anbud. En kombinasjon i omvendt rekkefølge er også mulig og kan observeres i britisk jernbanesektor.

En annen variant av kombinasjonen mellom markedsinitiativ og myndighetsinitiativ finner en innen nåværende tysk lokal persontransportlovgivning. Ifølge prinsippene for den lovgivningen gjelder selvstendig markedsadgang regulert av et system av autorisering for alle lønnsomme tjenester. I tillegg kan ikke-lønnsomme tjenester bli levert, men de må da bli satt ut på anbud av den ansvarlige transportmyndighet. Nå er det i Tyskland, som i mange andre land, ikke alltid samsvar mellom lovgivning og virkelighet, siden ulike subsidier og kryss-subsidier tilslører skillet mellom lønnsomme og ulønnsomme tjenester. Sist, men ikke minst, er det ofte forvirring knyttet til skillet mellom autorisasjonsregimer dominert av myndighets-

eide selskap og *public management* innen slike regimer. Selv om disse formene nok fungerer relativt likt i praksis, er de basert på fundamentalt ulike lovregimer. I en endringskontekst, og når en skal analysere hindringer mot endring, er det viktig å skille klart mellom lovens bokstav og praksis. I noen tilfeller vil praksiser være lettere å endre enn loven, i andre tilfeller vil en lovendring være den eneste måten en kan endre praksis på.

## Nivå for planlegging og kontroll innen kollektivtransport

Kollektivtransport er en tjeneste som leveres i et marked, dvs. der det foreligger tilbud, etterspørsel og en pris – selv om den kan være lav eller subsidiert – som betales for å bruke tjenesten. I likhet med innen mange andre markeder for varer og tjenester, må en rekke beslutninger være foretatt før passasjertransport-tjenester faktisk kan bli produsert eller solgt. Det er allment akseptert at planlegging og kontroll innen foretak kan deles opp i hierarkisk ordnede typer av aktiviteter, og vi vil her benytte følgende benevnelser:

**Strategisk nivå:** Strategisk planlegging angår formuleringen av generelle mål og bestemmelsen – i bred forstand – av de midler som kan benyttes for å nå disse målene.

*Kort sagt: Hva ønsker vi å oppnå?*

**Taktisk nivå:** Taktisk planlegging angår beslutninger om å fremskaffe de midler som kan hjelpe oss å realisere de generelle målene, og om hvordan å benytte disse midlene mest mulig effektivt.

*Kort sagt: Hvilket produkt kan hjelpe oss til å nå målene?*

**Operativt nivå:** Ser til at beslutningene blir iverksatt, og at dette skjer på en effektiv måte.

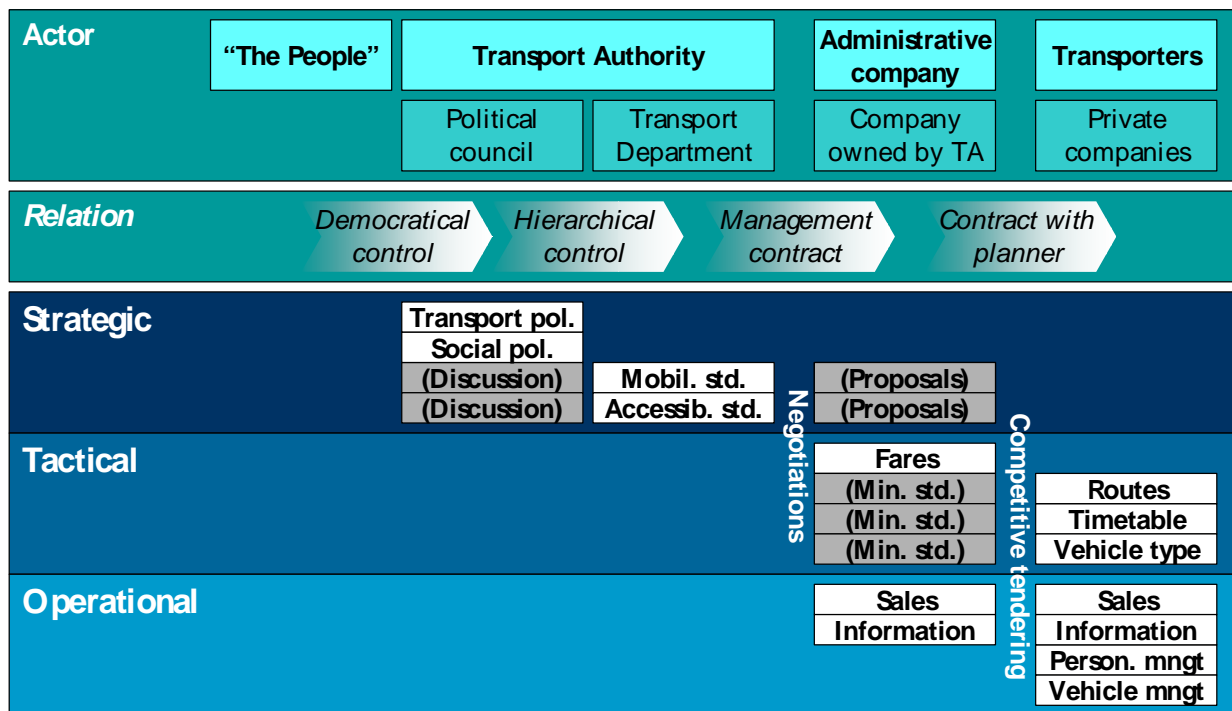
*Kort sagt: Hvordan produserer vi dette produktet?*

Figur S.2 oversetter disse til kollektivtransportsektoren, uten ennå å referere til noen spesifikk legal eller regulerende sammenheng (dette eksempelet refererer til et enkelt bussnettverk for mindre byer, stikkordlisten ville selvsagt vært lengre dersom mer omfattende infrastruktur er involvert):

Level	General description	Decision	
		“Software”	“Hardware”
<b>Strategic</b>  Long term (5 year)	<i>What do we want to achieve?</i>	<b>General goals</b> Transport policy Market share Profitability  <b>General description of the services</b> Area Target groups Intermodality	
<b>Tactical</b>  Medium term (1-2 year)	<i>Which services can help to achieve these aims?</i>	<b>Detailed service characteristics</b> Fares Image Additional services Vehicles Routes Timetable	
<b>Operational</b>  Short term (1-6 months)	<i>How to produce these services?</i>	<b>Sales</b> Selling activities Information to the public ...	<b>Production</b> Infrastructure management Vehicle rostering and maint. Personnel rostering and mngt

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Figur S 2: Nivåer for planlegging og kontroll innen kollektivtransporten



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Figur S.3: Konkurranseutsetting der operatøren har friheten til å endre tilbudet innenfor minimumsstandard satt av administrasjonsselskap

Til forskjell fra *hardware*-siden, som er produksjonen av vognkilometer, definerer vi *software*-siden som alt som er til nytte når en skal *selge* vognkilometer, dvs. omgjøre dem til passasjerkilometer. Sett fra et dynamisk perspektiv, må det selvsagt være feedback mellom de ulike involverte nivåer, spesielt basert på feedback fra (potensielle) klienter/kunder. Det bør understrekes at de strategiske, taktiske og operasjonelle nivå beskrevet her er betraktet ut fra hvordan transporttjenestene framstår for passasjerene, dvs. på systemnivå, og ikke fra synsvinkelen til en spesiell (privat) transportoperatør et eller annet sted i rekken av aktører. Enhver slik aktør vil ha sin *egen* strategi, taktikk og operasjoner, og disse bør ikke forveksles med det som er presentert ovenfor.

Som for enhver produksjon, kan en eller flere aktører være ansvarlige for hver av beslutningene presentert i tabellen. Generelt kan den strategisk-taktisk-operasjonelle kjeden ses som en (serie) *principal-agent*-kjeder. Mange former for organisering av denne kjeden av principal(er) og agent(er) er mulige. Tar en utgangspunkt i de ulike nivåene for planlegging og kontroll som er presentert over, sammen med innsiktene som blir fremskaffet gjennom klassifiseringen

av organisasjonsformer, blir det mulig å tegne grafiske representasjoner av både eksisterende og konseptuelle organisasjonsformer i kollektivtransporttjenester. Fokus her er på rollen til myndigheten(e) som konsesjonsmyndighet, med ansvar for etablering av tjenester og overordnet i rekken av aktører, og dens rolle som autoriserende og regulerende myndighet ved kontroll av markedsinitiativ. Eksempler illustrerer at spørsmålet om konkurranseutsetting gjør seg gjeldende på to nivå: Som koblingen mellom strategisk og taktisk nivå og som kobling mellom taktisk og operasjonelt nivå. I dette sammendraget gies bare ett eksempel (figur S.3), øvrige eksempler finnes i rapporten.

I mange tilfelle vil beslutninger om ett tema, som takster eller ruter, ikke bli tilskrevet helt og fullt en aktør. Når det gjelder takster, kan en observere at en politisk myndighet ønsker å gjenvinne beslutningsmyndighet om maksimum takstøkning, noen ganger også om takstnivå, at takststrukturen er fastsatt av et koordinerende organ med ansvar for kollektivtransport, og at det faktiske takstnivå er fastsatt av operatørene innen rammene satt av de andre aktørene. Dette kunne også blitt inkludert i figuren.

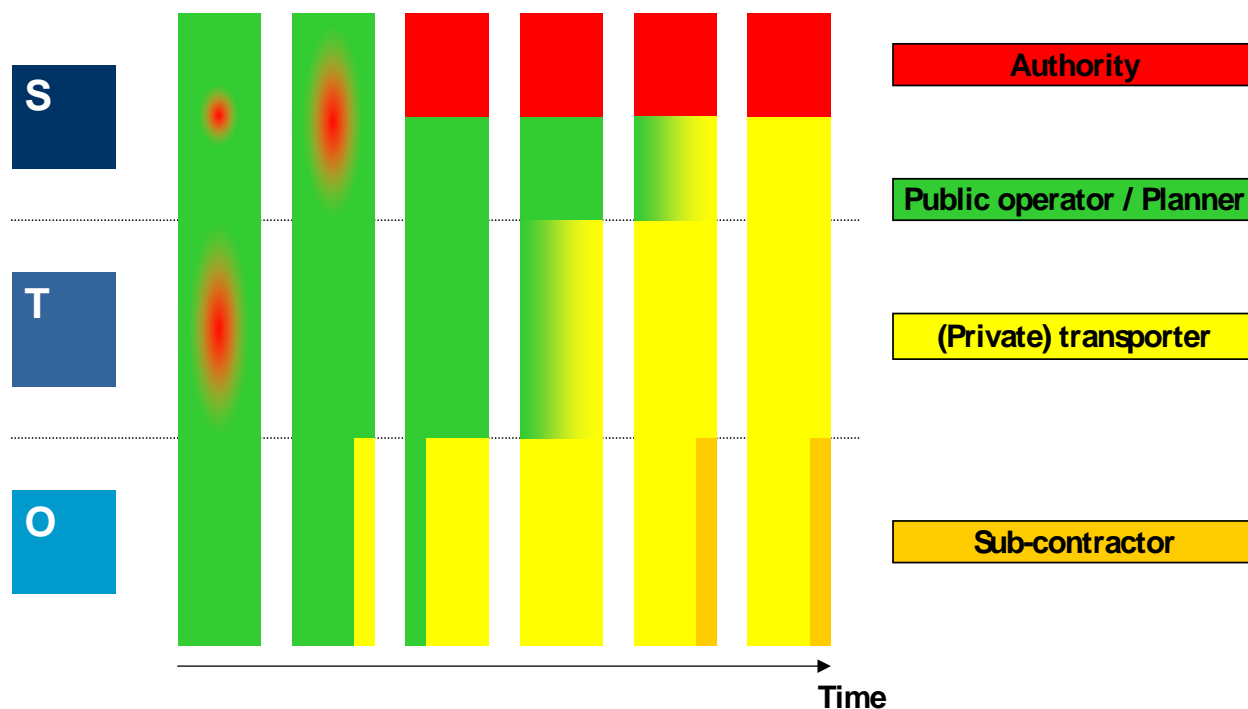
Organisatoriske former utvikler seg. Figur S.4 er en måte å fremstille dette grafisk når det gjelder planlegging og kontroll. Dette inkluderer imidlertid ikke den finansielle siden. Figuren beskriver, som et eksempel, følgende utvikling:

- Utgangspunktet er en offentlig eid operatør som er gjenstand for uklar myndighetsutøvelse som for det meste finner sted på taktisk nivå (takster, busstopp, ruter) og i mindre grad på strategisk nivå (sosiale mål for kollektivtransporttjenester).
- Det første trinnet rommer endret fokus i myndighetenes intervensjon på det strategiske nivå (spesifisering av målene for det kollektive transport-systemet heller enn midlene) og overlater stor grad av ansvar for utforming av tjenesten til operatøren. Det eksisterer fortsatt ingen kontrakt mellom myndighet og operatør. Operatøren er også bedt om å konkurranseutsette deler av tjenestene gjennom anbud for å få et sammenligningsgrunnlag for produksjonseffektivitet og øke effektiviteten innen den offentlige operatørens område.
- Det neste trinnet rommer kontraktualisering av relasjonen mellom myndighet og den offentlige eide operatøren. Samtidig er en økende del av produksjonen satt ut til underleverandører, utvalgt gjennom konkurranse. Den offentlig eide operatøren blir gradvis et planleggingsorgan med mindre og mindre egenproduksjon.

- Det tredje trinnet gjelder overføring av visse deler av planleggingsmyndighet til transportør utvalgt gjennom konkurranse. Planleggingsorganet holder fram med å sette opp et antall koordinerende regler for å garantere integrasjonen av tjenester mellom utvalgte transportører.
- Det fjerde og femte trinnet innebærer videre overføring av planleggingsmyndighet til transportørene. Planleggingsorganet blir foreldet. Transportørene får anledning til å subkontraktere deler av produksjonen dersom de ønsker det.

Dette er bare et eksempel, men de første tre eller fire søylene gir et dekkende bilde av den utviklingen som har funnet eller er i ferd med å finne sted i Danmark, Sverige og London.

Det er altså denne klassifiseringen av ulike organisasjonsformer som representerer kjernen i denne rapporten, som et rammeverk for å analysere ulike former for konkurranseutsetting. Samtidig avsluttes rapporten med et femte kapittel som presenterer elementer for videre analyse av relasjonene mellom aktører, spesielt kontraktsrelasjoner, som *principal-agent*-teori, risikofordeling i forbindelse med netto og bruttokontrakter, distinksjonen mellom eierskap og bruk og ulike former for planlegging.



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Figur S.4 Utviklingen i organisasjonsformer

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# **1 Reasons for state intervention in the transport sectors**

Transport services are provided on markets. The rules of the free market are the basic rules for most sectors in our economies. Yet, the transport sector is characterised by relatively stronger level of state intervention in the functioning of the markets. These interventions relate to two fundamental issues:

- ◆ The inadequate functioning of the free market process in some transport sectors, and
- ◆ The dissatisfaction with the outcome of the market process from a socio-political point of view.

These two items will be introduced hereafter in two separate sections. The first will treat the issue of market failure. Particular attention will be paid to externalities (such as congestion and pollution) as these are very relevant in the transport sectors. Network externalities is another form of market failure that is of great relevance for the passenger transport sectors, especially as these are commonly offered in the form of scheduled transport services.

The second item will be introduced in a second section. Several of the interventions that can be witnessed in the passenger transport sectors have little if anything at all to do with market failure. Many forms of intervention in the transport sectors have to do with the defence of other public interests. While some are related to market failure (such as the regulation of safety), others are more related to general goals (such as the facilitation of a larger labour market). Many interventions find their origins in a political wish to achieve specific social, or welfare, aims. These are related to issues of redistribution. Redistribution can take place between regions (transport infrastructures are established in backward regions in the hope to promote their development) or between people within a same region (fare rebates are given to specific target groups of socially deprived people in society).

## **1.1 Economic theory: the concepts of market failure, externalities and network externalities**

This section will briefly present some main concepts of economic theory that are of relevance for state intervention in free, unregulated markets. The presentation of these concepts is intended to allow readers without a background in economics to understand the covered material. The first concept to be discussed is that is 'market failure', which forms the basis for the theoretical rationale for intervention in the economic system. Then the existence of externalities, as one of



the main sources of market failure, is discussed in more detail before concluding with some additional points on network externalities.

### 1.1.1 Market Failure

The standard approach for microeconomic theory is to construct a model for a perfectly competitive market system. On the basis of a set of assumptions it can be shown that this system will produce an efficient outcome in terms of:

- ◆ What will be produced, i.e. the final mix of outputs
- ◆ How will it be produced, i.e. the allocation of resources among firms
- ◆ Who will get what is produced, i.e. the distribution of outputs on consuming households

In this context an efficient outcome (called ‘Pareto optimality’) implies that it is not possible to change the allocation of resources to make some people better off without making others worse off. The efficient outcome requires:

- ◆ An efficient mix of outputs (the outputs produced should reflect the preferences of the households)
- ◆ An efficient allocation of resources among firms (outputs produced using the lowest cost technology)
- ◆ An efficient distribution of outputs among households (outputs distributed to the households with the highest positive subjective valuation of the goods/ services, reflecting consumer sovereignty)

Obviously, if (1) the output mix could be changed towards outputs higher valued by households, (2) the outputs could be produced with lower cost or (3) the outputs could be distributed to households with a higher positive valuation, then it would be possible to make some people better without making others worse off (in contrast to our definition of an efficient outcome).

It should be noticed that although this model will generate an efficient outcome to the basic question of resource allocation there is no guarantee of an equitable (fair) allocation<sup>1</sup>. Furthermore, the efficiency result for an unregulated market based system is based on a number of assumptions, including:

- ◆ No individual household or firm is large enough relative to the market to have any control over price, i.e. all economic decision makers have to take input and output prices as given
- ◆ Households have perfect information on product quality and on all prices available and firms have perfect knowledge of technologies and input prices
- ◆ Private benefits and costs are identical to the benefits and costs to society as a whole
- ◆ Markets are complete in the sense that it is possible to trade any good for another

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<sup>1</sup> In the extreme: an allocation where one individual in the economy receives all outputs would be Pareto optimal, as any change although making the rest of the population better off would make this individual worse off.

- ◆ Clearly defined property rights in terms of who owns property and what their rights over it are; among the most important of these is the right to limit access to property by other individuals in the society

market system will produce an efficient outcome is not valid. In other words: ‘*market failure*’ is present. Market failure occurs when resources are allocated inefficiently by the free, unregulated market system. This situation can provide a rationale for intervention in the economic system, although the possibility for ‘*intervention failure*’ should be taken into account.

The assumptions for the efficiency of a perfectly competitive market system provide a list of sources for market failure, including:

- ◆ *Imperfect competition*: Imperfect competition involves the situation where firms in the industry have control over the price and competition. Forms of imperfect competition include monopoly (only one firm), monopolistic competition (large number of firms with differentiated products) and oligopoly (small number of firms). A common outcome for these market structures is lower output and higher price compared to perfect competition, i.e. an inefficient output mix. Inefficient allocation of resources to firms in an imperfectly competitive industry is also possible, e.g. due to resources used on market power maintenance and lack of pressure from competitors to minimise costs<sup>2</sup>.
- ◆ *Imperfect and asymmetric information*: The conclusion that markets work efficiently is strongly dependent on the assumption that consumers and firms have full knowledge of product characteristics, prices etc. If this assumption does not hold then economic transactions between buyers and sellers may not turn out to be optimal. For example, if a firm has incomplete information about input prices, it is likely that costs of production will not be as low as possible.
- ◆ *Public goods*: There is a class of goods and services that in a completely unregulated market economy will be under-produced or not provided at all, the so-called ‘public goods’. Public goods bestow collective benefits on members of society. Generally, no one can be excluded from enjoying the benefits from collective goods whether or not they pay for it<sup>3</sup>. This characteristic creates no incentive for profit seeking firms to produce public goods, as there may not be a mechanism to ensure payment by the consumers. Furthermore, a public good involves non-rivalry in the consumption: one individual’s consumption does not limit the consumption of another individual (in contrast to private goods: e.g. the carrot consumed by one individual cannot be used by another individual). Classic examples are national defence

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<sup>2</sup> It should be noticed that an industry structured as a monopoly/oligopoly might involve economies of scale possibilities (where costs are lower due to the larger scale of operation). Indeed, in some cases there are economies of scale so large that single-firm production is the most efficient (this case is called a ‘natural monopoly’).

<sup>3</sup> Public goods represent one example of incomplete property rights. Common ownership of goods is another example (see below).

and lighthouse: once produced, national defence is available for the whole nation<sup>4</sup>.

- ◆ *Common ownership of goods (common property resources)*: Common ownership to goods will create problems in a free, unregulated market system, as property rights are not clearly defined. A good or resource characterised by common ownership implies that no exclusive property rights exist, that is other individuals or firms cannot be (or are not) prevented from using the resource. Anyone is free to exploit such goods without being required to pay a charge. These goods are, without intervention, likely to be over-utilised. For example, the lack of enforceable property rights to the stocks of ocean fish has led to a too high level of fishing.
- ◆ *External costs and benefits (externalities)*: An externality can be defined as a cost or benefit arising from any activity which does not accrue to the person or organisation carrying out the activity, there is a difference between the private costs/benefits and the social costs/benefits<sup>5</sup>. Externalities are a problem only if they are not taken into account by the person/organisation carrying out the externality creating activity. The presence of externalities with respect to the production or consumption of certain goods and services can imply that a market based system will produce too much (external costs) or too little (external benefits) of such goods and services. A classic example is the firm producing certain goods for consumption also generates pollution that affects the production possibilities of nearby farmers. In this case, the problem is that the firm creating the pollution is not considering the costs for the farmers in terms of lost output in the decision on how much to produce.
- ◆ *Incomplete markets*: A situation with incomplete markets for certain goods and services would create obvious problems for the efficiency result of the free, unregulated market system. Existence of incomplete markets means it is impossible to trade some goods for others; or markets are very thin, i.e. little trading activity. An example could be clean air where a market is not available (this example is linked to externalities).

### 1.1.2 Internalisation of externalities

The presence of externalities can, as demonstrated above, lead to an inefficient allocation in a free, unregulated market system. Internalisation of externalities is a possible solution to this problem, whereby those producing externalities take these external costs/benefits into account in their decision-taking concerning production or consumption. If it is possible to integrate external costs/benefits in the decision-taking by firms and households then it can be shown that an efficient allocation is feasible. For example, if a polluting firm could be made to bear the

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<sup>4</sup> It is necessary to make a distinction between pure public goods where the above conditions about non-exclusion and non-rivalry hold completely and those goods for which these conditions are only valid to a certain extent.

<sup>5</sup> The above definition of externalities relates to the effects generated. Another definition concerns the situation where an inefficient (non-Pareto optimal) outcome is the result of non-existence of markets (there is a lack of incentives to create these markets). It should be noticed that this definition involves a subset of the externalities identified using the effects related definition.

cost in the form of lost agricultural output then these costs will enter into the decision of the firm in terms of how much to produce.

The difficult aspect of this solution is how externalities can be internalised. One possible approach towards negative externalities would be for the government to impose taxes on firms generating external costs corresponding to the size of these costs<sup>6</sup>. Other solutions could include legislation on limits on various types of external costs<sup>7</sup> (e.g. pollution limits) with associated fines or establish markets for rights to generate external damage (e.g. markets in pollution rights). However, a key problem with these solutions is the level of information required for the intervention to lead to a more efficient allocation than without intervention as the available information concerns the market situation with non-internalised externalities.

Common for the solutions outlined above is government intervention in the market. However, an alternative type of solution is internalisation of externalities through individual negotiations between the consumers or firms producing the externalities and the consumers or firms whose decisions they affect. The situation with a polluting firm can illustrate this approach: farmers whose output is influenced by the pollution could pay (bribe) the firm to achieve a lower level of the output generating the pollution. Alternatively, if the farms have a legally enforceable right to clean land they could accept some production from the polluting firm provided a payment is established. If the bargaining costs associated with these negotiations are zero (or negligible), property rights clearly defined and number of negotiations small then it can be shown that the market will ensure the internalisation of all externalities. However, in practice these assumptions will not hold since the number of firms/consumers involved in externality producing activities is large associated high bargaining costs and unclear property rights with respect to certain resources.

### **1.1.3 Network externalities**

An important potential source of market failure in the transport sectors is the issue of network effects. This issue is present in particular in scheduled transport services. Network economics is potentially an important field of theoretical research when analysing issues relating to coordination. We have to distinguish between network effects for so-called 'scheduled transport services' and network effects as analysed in the general utilities literature (water, gas, electricity distribution), which relate to infrastructure networks. Unfortunately, the analysis of the network economics of scheduled transport services is not sufficiently advanced, especially for what concerns local public transport and passenger rail networks. Sources within airline economics may provide additional information, but airline networks are substantially simpler as competition takes place on point-to-point services, or bundles of such services in the context of hub-and-spoke

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<sup>6</sup> The parallel solution for positive externalities (external benefits) would be subsidies to consumers or producers.

<sup>7</sup> Other solutions for positive externalities include government provision of goods and services with external benefits along with individual bargaining.

networks. In public transport (both urban services and railway services) the analysis is considerably more complex as a single vehicle run provides services on numerous pairs of origins and destinations.

According to the literature on network economics (Economides, 1996), a main reason for the appearance of network externalities is the complementarity between the components of a network. A condition for complementarity is compatibility.

### **Complementarity**

A direct network effect is the concept that the product's value for customers depends on the number of customers already using the products provided by the network. In a telephone network, the value of a connection for a subscriber – and therefore of the network as a whole – is dependent upon the number of other subscribers. Everybody in the network gains when more connections are added. The parallel in public transport is that passengers often consume connecting services to get to their destination. Separate transport services within a network often have complementary demands. The direct network effect – a consequence of complementarity – is that service improvements on one segment (e.g. a higher frequency) will lead to an increase in demand for services on other segments used in combination with that segment.

A larger group of public transport users gives in turn rise to indirect network effects through the resulting reduced generalised costs for existing users due to higher frequencies or larger number of destinations served. This is also known as the Mohring-effect (1972), according to which additional passengers on a link will in due course be followed by increases in frequency, which will attract additional ridership as higher frequencies mean higher service quality through reduced user costs linked with transfer time and excess waiting time at the destination. Some studies related to the Mohring-effect emphasize its welfare economics aspects and use it as an argument for subsidisation.

### **Compatibility**

A condition for complementarity between services is compatibility and this brings the issue of coordination in public transport into the reasoning. There are two parts to this issue of compatibility: the cost and revenue effects of coordination for transport operators, and the user cost effects of non-coordination for the transport passengers. Compatibility is an absolute concept in telephony: communication is or is not possible. It is, however, a more gradual concept in passenger or freight transport. Interchanges between public transport services are always possible but the user costs of realising such interchanges vary substantially. Relevant elements of user costs are the costs of searching for information on complementary services, the additional effort linked with the purchase of connecting tickets and the disutility (i.e. time cost) of the excess interchange time when services are not well coordinated in planning or in realisation (such as in case of disruptions). The idea on the passengers' side is that optimal coordination leads to a reduction in generalised costs and makes the coordinated system (in terms of standards, information, billing, interchange, etc.) more attractive to customers than its non-coordinated parts.

A difficult question in practice is that of the optimal level of coordination. There is a tendency in the public transport world to value coordination above all else.

Too much coordination may lead to passenger cost increases through longer travel times due to exaggerated bundling and additional transfers that are not compensated by shorter interchange times. A proper recognition of the total social costs and benefits of coordinative measures is needed to identify a proper level of coordination. Coordination should be pursued up to the level at which the marginal social costs of coordination start to exceed the marginal social benefits.

An additional aspect is that the perceived quality of a chain of services will depend upon the quality of the weakest service along the chain. An important question is then whether independent companies operating on a pure profit maximising basis would take all of these aspects into consideration when determining the amount of compatibility (i.e. coordination) they want to achieve. This is a main issue in economic literature, but the implications for coordination in transport, and in public transport in particular, are unclear and underdeveloped. A number of conditions will determine whether firms strive towards compatibility when providing complementary services. Unfortunately, nothing can be said a priori on the location of the borderline between beneficial autonomous coordination and lack of incentive. The reason for this is that many situations can arise as to the costs to achieve compatibility, their repartition amongst companies involved, and as to the size and division of the resulting additional revenues among participants. This may lead to low incentives to invest in compatibility with, furthermore, a danger for free-riding. In a number of cases, financial transfers between operators providing complementary services could appear autonomously such as to realise coordination to their mutual benefit. But nothing can be said about the social optimality of such cooperation as it is based on a pure profit maximising approach, forgetting about the wider welfare implications. If operations are not profitable but subsidised – and this is the common situation in most of public transport – then incentives for cooperation may be further weakened. While coordination may result in additional ridership, in most cases this will also result in an additional need for subsidisation even if the marginal customers require less subsidies than the existing customers. In this situation, the commercial incentives to coordinate services will depend not only upon the relative size of the additional costs and revenues of coordination but also on the details of the subsidising arrangements, especially whether these allow subsidy growth.

### **Competition vs. monopoly**

The reasonings above were either static or assumed that companies had their own territory. To be complete, however, competition has to be considered. The incentives to invest in compatibility (such as information, timetabling and fares in public transport) can in such a case become even lower. Compatibility becomes a strategic consideration in such case. The stronger firm is likely to dislike compatibility, whereas the weaker one prefers it. Examples of such behaviour can be found in the British deregulated bus market where dominant firms decide to exit from integrated ticketing systems.

The provision of all services by monopoly could solve in principle the network externalities problem. A recommendation for such an organisational form can often be heard in the public transport world. It was tried in Britain after WWII until 1963 with the creation of the British Transport Commission regrouping rail

and road transport, the London passenger transport service, canals, port, shipping, hotel and catering services and travel agencies. A monopolistic organisational form is still common for most public transport in European cities. The current advice to introduce area-wide franchises by competitive tendering only seems to bring competition to this sector. In effect central coordination and monopolistic provision are maintained by this new regime, while the competitive tendering process only solves the productive efficiency issues. A fundamental issue here is that of the planning efficiency in time of such monopolies and consequently of the design of appropriate regulatory measures to control them. The trade-off is between the perceived integration benefits of monopolistic planning versus the potential innovative gains that could be generated by the existence of operators in direct competition; this issue has indeed been around for many decades in the transport world.

### Checklist

Market failures

- Which forms of market failure are present in the sector?
- Are these failures recognised in the political debate?

## 1.2 Socio-political reasons

- ◆ Reasons unrelated to market failure
- ◆ Reasons related to political wishes, related to the defence of “the public interest”
- ◆ Usage of regulation of one transport sector to reach aims related to problems in other transport sectors (subsidise public transport, rather than introducing road pricing)
- ◆ Usage of regulation of a transport sector to reach aims located outside of the transport sector (wealth redistribution between people or between regions)
- ◆ ...

### Checklist

Socio-political interventions

- Which forms of intervention are present in the sector?
- For what aims?

## 2 Institutional setting

### Levels of institutional analysis

The issues analysed in this project are essentially institutional. Various forms of institutional changes have taken place in the transport sectors to be studied in this project.

The four-level framework that Williamson (2000) suggests to distinguish levels of social analysis seems well suited to clarify our discussion. The distinction in levels suggested by the framework is based upon the average frequency of institutional change at the respective levels. The highest level (level 1), called ‘social embeddedness’ by Williamson, is that of the institutions that change very slowly (such as norms, tradition, customs or religions). These are essentially informal constraints. Level 2, called ‘institutional environment’ by Williamson, is the level at which the ‘rules of the game’ for economic activity are determined by politics (the legislator). Property right laws are located at this level. These formal constraints evolve over decades or centuries. Level 3 is about the ‘institutions of governance’ and deals with the ‘play of the game’. This is about choosing the right mode of organisation (market, hybrids, firms, bureaus), which is a decision that can be re-evaluated more often, e.g. over periods of one year to a decade. Transaction cost economics is located at this level. Level 4 is about choices of output and prices (neo-classical analysis) and agency theory (incentive alignment, contractual content); these are decisions that are taken in a more or less continuous way.

The framework presented by Williamson covers adequately the issues that we want to address here. Yet, some additions may enhance clarity. An important distinction exists in the public transport world, as in other sectors, between ‘laws’ and additional ‘regulations’. Laws are typically more stable and more difficult to reform than additional regulations enacted directly by governments or ministers. In this sense, we have a difference in speed of change here too. We therefore introduce a split in Williamson’s level 2 into a ‘legal’ (2.1) and a ‘regulatory’ (2.2) level for the purpose of our analysis as this will be relevant to discuss barriers in public transport reforms.

### Dynamic perspective

In this framework, each higher level imposes constraints on the next level. Feedbacks exist in the longer term and lead to the evolution of the respective institutions. New arrangements are adopted or adapted, a selection takes place whereby some arrangements survive or are copied, and others may, perhaps, disappear.

As can be seen in the reform of several transport sectors, deliberate changes at the legal level (level 2), sometimes take place. We could then focus in first instance on the ‘hierarchical’ relation between this level and the lower institutional levels.



In due course feedbacks will start to appear. Amendments and learning will take place at the various levels.

### **A remark about the choice of governance in the public transport sector**

In the context of this project, level 3 (governance) pertains to specific choices in terms of what we call ‘organisational forms’ (van de Velde, 1999) for the supply of passenger transport services, which is a complex of choices that can span over several actors. In short, this is, seen from sectors in the economy that are submitted to genuine competition between a multitude of suppliers, about ‘make-or-buy’ or ‘hierarchy-versus-market’ in Transaction Cost Economics terminology. Suppliers on such markets select the most economizing form of transaction governance. In our case, though, genuine competitive markets for public transport services do usually not exist. One notable exception is what was meant in Britain (outside London) since the 1986 deregulation. In most cases, market-initiative is either more or less strongly regulated, which leads to local monopolies (as in Germany), or a monopoly form is institutionalised by a law granting the monopoly of service provision to transport authorities (as in France and, more recently, in the Netherlands).

It is important to realise that the make-or-buy question is present in principle in all these cases. Yet in the authority monopoly case, the legal framework (level 2) often additionally imposes contracting-out by competitive tendering at level 3, preventing authorities to choose for a ‘make’-solution (except in France, where this possibility is explicitly included as first option) and thus limiting their choice to one of the various forms of outsourcing (‘buy’). These can then vary from outsourcing of all planned production, through to various forms contracting-out of the production with design freedom, but here too, the legal framework at level 2 can limit the range of choices available at level 3 and 4.

### **Checklist**

Pay due attention to the various levels of institutions and institutional changes during the research

- Traditions, laws, regulations, mechanisms of governance (organisational forms) and contracts
- How do these evolve? Why?
- What feedbacks can be witnessed?

## 3 The appearance of transport services

The organisation of passenger transport in Europe has been submitted to considerable changes during the last two decades. A common feature of the changes implemented is the growing usage of some form of competition. These can broadly speaking be classified under the headings of ‘direct competition on the market’ versus ‘competition for the market by tendering’. These two forms are also known as ‘competition *on* the road’ and ‘competition *off* the road’ in the road passenger transport sector.

The actual organisational forms implemented in the various sectors and countries exhibit more variety than suggested by this division. While competition *on* the road gives to operators the possibility to develop services as they like, systems using competition *off* the road often prescribe very strictly which services have to be produced. But here too many variations exist.

With the major exception of Great Britain where free competition *on* the road, privatisation and *deregulation* were introduced, most Western European countries where competition has been introduced have moved towards various forms of *regulated* regimes using competition *off* the road. Such regimes have now been implemented at a wide scale in Sweden, Denmark and France, while in other countries their usage is either growing (Germany) or planned (the Netherlands). Transport authorities retain (or get) in such regimes all powers to define the transport services, if they so wish. Competitive tendering procedures are then used in such regimes to select efficient operators for the realisation of the services that are mostly centrally planned by the authority or its planning company. However, a growing number of cases seem to want to transfer service design decisions to the selected operators.

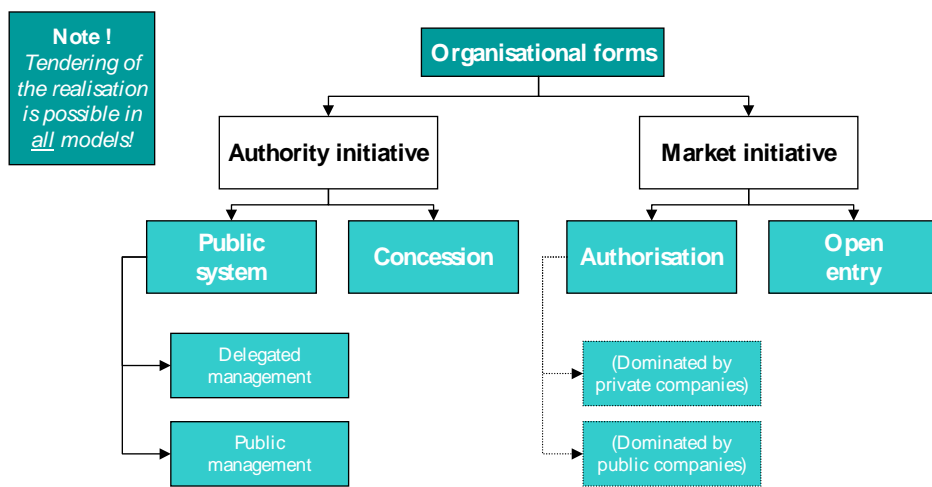
This chapter covers a main issue in the functioning of transport markets: the institutional setting within which transport services are meant to appear. The essential issue here is that of the “right of initiative”: who has the right to ‘create’ transport services? Is that anyone on a free market, or is it restricted to some transport authority?

### 3.1 Classification of organisational forms

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Figure 3.1 presents a global classification of organisational forms as can be encountered in public transport in Europe. The first distinction presented in the diagram is the dichotomy between ‘authority initiative’ and ‘market initiative’. This distinction refers to two fundamentally different categories of organisation of the supply of public transport services and relates closely to the legal framework

within which services are meant to appear. In authority initiated regimes, those authorities which have received the responsibility for transport (further called ‘transport authorities’) have the *legal* monopoly of initiative. This means that autonomous market entry is legally impossible and that all production or market entry is the result of a conscious one-sided authority initiative to produce or request the production of services (this is, e.g., the current legal situation in local passenger transport in France outside the Paris region). In market initiated regimes, the supply of transport services is based upon the principle of autonomous market entry resulting from a market process with more or less regulatory checks at the entrance (this is the current legal situation in local passenger transport in Great Britain – with much freedom – and in Germany and the Netherlands – with less freedom).



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Figure 3.1: Organisational forms in public transport

In short, the main distinction is between the organisational forms where the right to initiate the creation of passenger transport services is reserved to the authority, who can then delegate it, and those organisational forms where this right lies “in the market”, for any one to grab.

It should be noted that *all* regimes presented in this figure can make use of competitive tendering to contract out parts or whole of their activities. This stresses that competitive tendering is merely a selection mechanism in the context of outsourcing, it is a method of production available to any initiator of services whatever the organisational form, but it is not an organisational form in itself.

The following paragraphs will describe market initiative regimes and authority initiative regimes in more details. To illustrate this, another graphical representation will be provided in order to represent the relationships between the actors in a wider context, including the consumers. This takes the general form of triangular graphs and originates in a study by Savas (1987). This original representation has however been substantially adapted in order to fit the purpose of our study. The graphs illustrate the various elements of the relationships between the categories ‘consumers’ and ‘voters’, ‘authorities’ and ‘transport

companies'. These graphs make a useful distinction between influences, payments, service delivery and market encounters. They are not able, however, to represent the distribution of decision-making powers at the strategic, tactical and operational level between the actors involved. For this purpose, further figures will be presented in a following section of this document. Those graphs have to be used in complement to these graphs.

Legend for the graphs representing the triangular relationships:

- ◆ C=consumers, V=voters, A=authority, O=operator
- ◆ n=national, r=regional, l=local.
- ◆ A shadow means 'several' actors

When trying to illustrate a real-world case, it is possible to indicate which relations are more important by varying the thickness of the arrows linking the various actors. For example: a direct referendum for public transport investments in Switzerland is a much stronger voter's influence than a general election were the votes are balanced against other political objectives. This feature shall however not be used in the graphs below, which are only meant to be neutral examples.

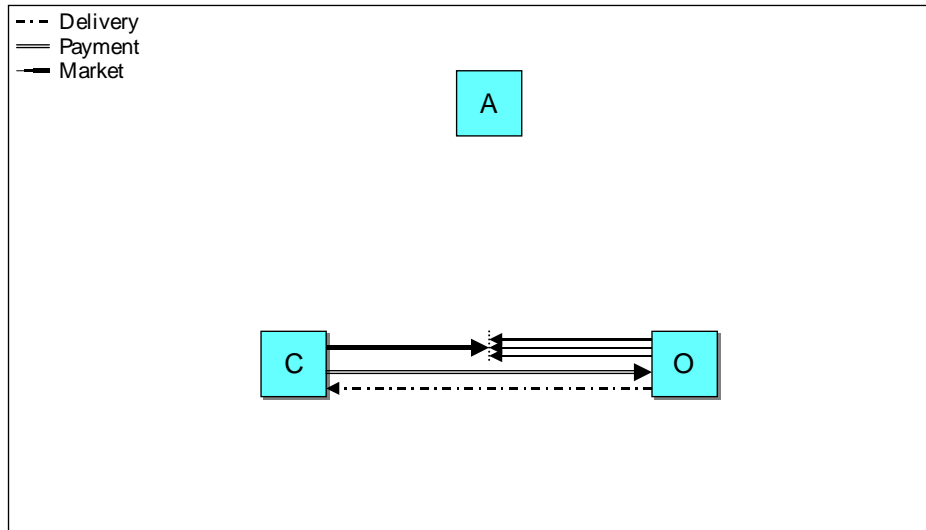
### 3.1.1 Market initiative

The market initiative regimes have as common characteristic that commercially viable services are meant to appear out of autonomous market processes. Market initiative regimes vary from fully competitive 'open entry regimes' to strict 'authorisation regimes' where the operators are granted a more or less permanent and extensive levels of exclusivity. These should be seen as two extremes in a continuum.

In the first extreme, *open entry regimes*, operators are allowed to compete freely with each other and upon their own initiative, even by providing services that are parallel to each other (see TOI report <sup>740/2004</sup>

Figure 3.2: ). In theoretical terms (microeconomic theory), such regime will only be optimal from a social point of view if the conditions for the absence of market failures are fulfilled. The theoretical reference frameworks on which this is based can in principle be that of pure and perfect competition, contestable markets or monopolistic competition. The British bus sector, e.g., is supposed to work according to the contestability framework.

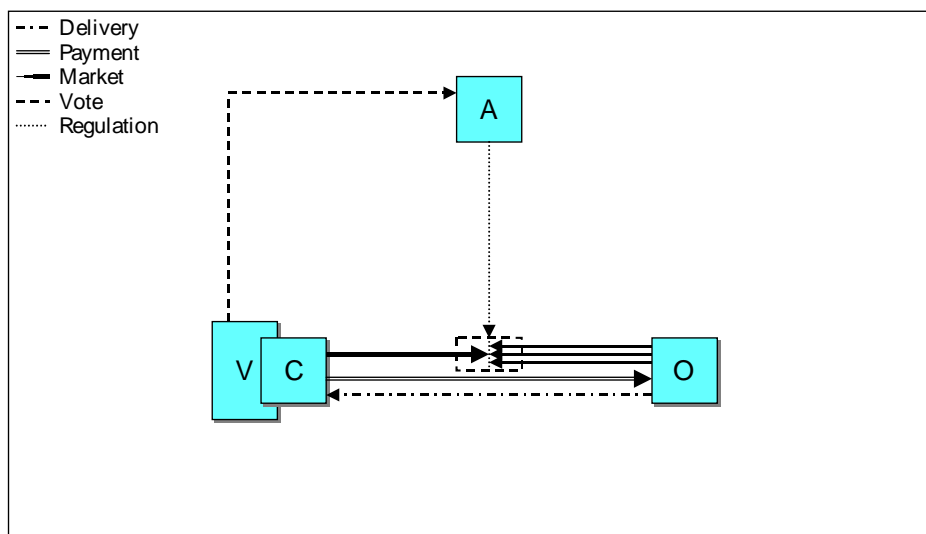
It should be noted that authority intervention is not fully absent even in this free market regime as proofs of professionalism, credit-worthiness and reliability will usually be required by a relevant authority to guarantee safety and service continuity. This will then result in the issuing of an operator's 'licence' to mark access to the profession, as a distinct feature from the access to the market.



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Figure 3.2: Open entry

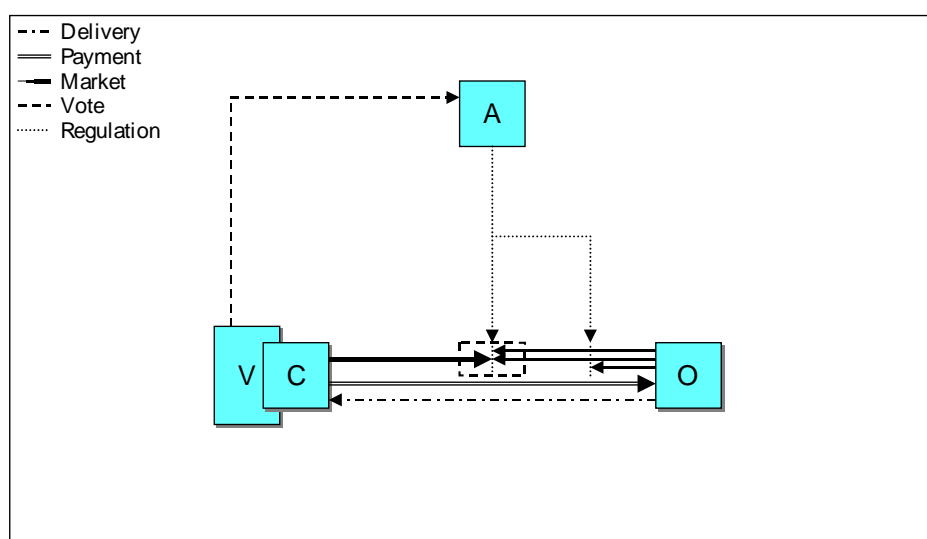
Furthermore, the authority can also set a number of ‘rules of the game’ for all operators present on the market, controlling and restricting their actions (see Figure 3.3). This can also be characterised as a ‘watchdog’ and/or ‘referee’ role. One example is the control on predatory behaviour by the Office of Fair Trade in Great Britain. An example of ‘rule of the game’ would be rules pertaining to the co-ordination of supply between neighbouring or overlapping operators. In other words, it could be stated that operators, once present on the market, have to follow a number of rules of conduct such as to guarantee system integration, such as: co-ordinate their timetable with neighbours such as to improve connections, use the same ticketing system, participate in integrated information systems, etc. Such an authority intervention would be an illustration of a way to solve market failures related to network effects.



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Figure 3.3: Authority setting the 'rules of the game'

In the other extreme, *authorisation regimes*, companies on the market are also the initiators of transport services, but licensed transport companies have to apply for an ‘authorisation’ before being allowed to actually provide services. This means that entry is submitted to the prior approval from a relevant (transport) authority (see Figure 3.4). In other words, two forms of authority intervention are present here: a general intervention in the form of a licensing procedure and a particular intervention to judge the desirability of the transport services suggested by the autonomously-acting licensed transport company (authorisation procedure). Furthermore, setting ‘rules of the game’, for instance for co-ordinative purposes as presented above, is a feature that can also be encountered in authorisation regimes and, for that matter, in whichever from within the continuum ranging from free entry to authorisation. It should however be noted that this role can/should be fulfilled by a different authority than the authority issuing authorisations.

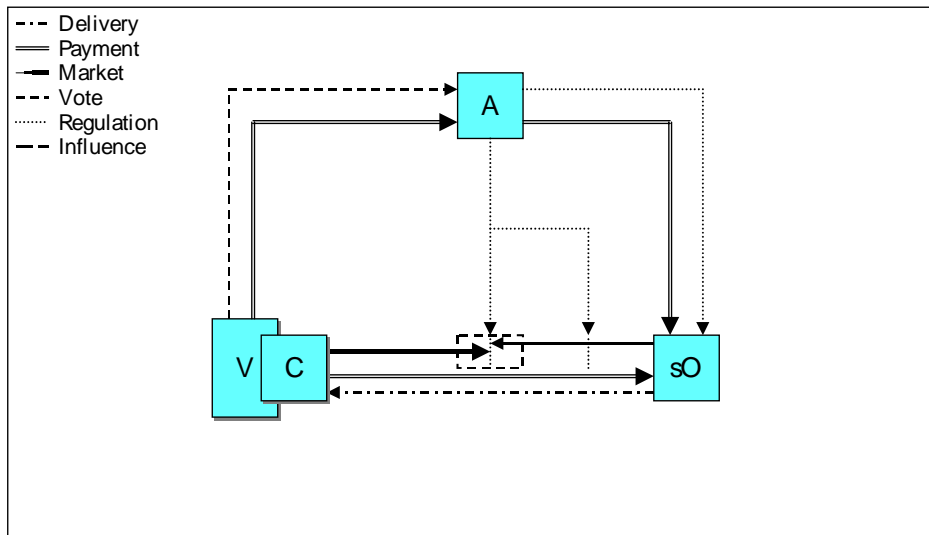


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Figure 3.4: Authorisation regime

The authorisation granted to an operator protects him from direct competition but the extent of the protection and the period of time of protection can vary from minimal to absolute. This depends upon the choices made by the legislator and by the authority responsible from issuing of the authorisation. A wide range of possibilities exists here, granting more or less exclusivity to the operator. Regulation could, e.g., state that entry is prohibited as soon as it influences existing services. Alternatively it could state that entry is only allowed when it improves the existing services (such as an increased frequency by co-ordinating the additional services with the existing ones). In such models the initiative to create or improve services remains on the side of the market. The danger is, however, that the regulations and protections against competition become so extensive that firms are no longer disciplined by market forces and/or that regulatory capture takes place. This would, e.g., be the case when the incumbent operator benefits from an almost automatic renewal of its authorisation when it is due for renewal.

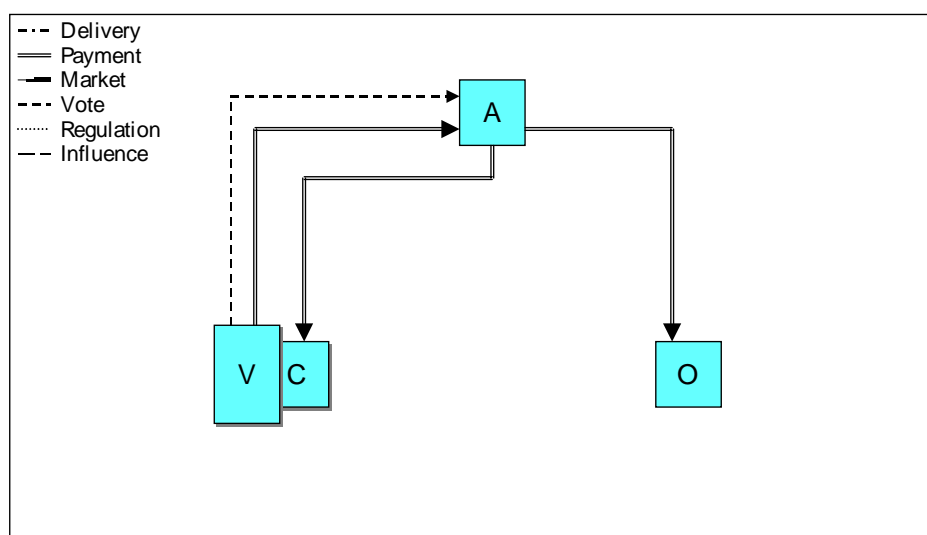
Authorities can also themselves behave as entrepreneurs within this regime of market initiative (see Figure 3.5). Whereas market initiative regimes have originally be developed to co-ordinate the behaviour of autonomous private entrepreneurs, in many case one can observe that authority-owned companies also operate on such markets; such as in the Netherlands and Germany, or in Britain before the 1986 deregulation.



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Figure 3.5: The authority as entrepreneur in market initiative

Finally, as can be seen in Figure 3.6 which focuses on subsidisation issues, various authorities can grant fare rebates to specific target groups of users (redistribution of wealth to these groups by the issuing of vouchers to these groups or by compensation of fare rebates to transport operators) and/or subsidise directly transport companies (general stimulation of the supply of services by direct transfers or, e.g., by fuel duty rebates). As this figure focuses on the subsidisation issue, therefore all other features pertaining to the regulatory aspects have been omitted. Such subsidies aim at reaching a different market equilibrium than what would prevail otherwise. These subsidies artificially transform a number of unprofitable markets into profitable markets and thereby increase the number of services that can appear autonomously in market initiative regimes



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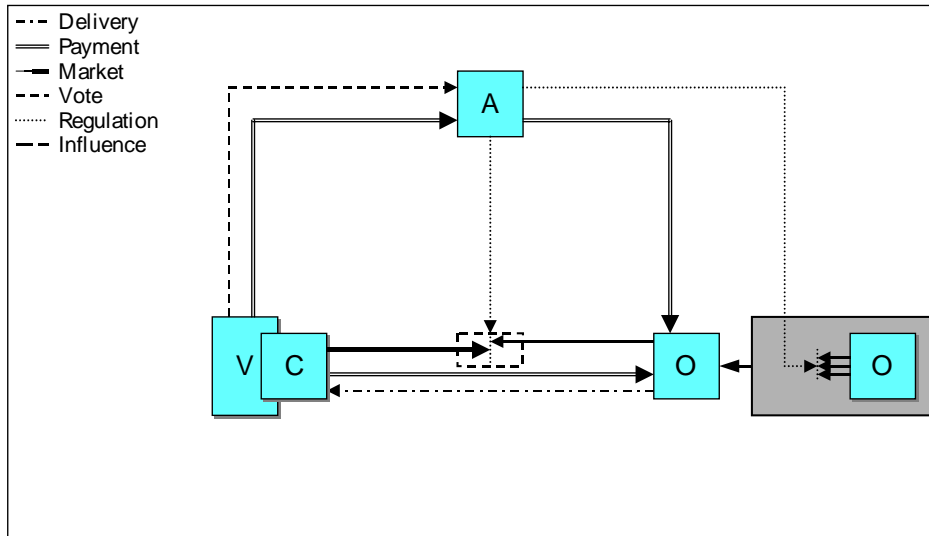
Figure 3.6: Subsidising consumers and/or operators

### 3.1.2 Authority initiative

Authority initiative regimes have as common characteristic that services can only result from a conscious action by the authority. As such no services can appear as result of simple market forces as no legal provision makes such autonomous entry possible (such a legal public monopoly of initiative exists in France outside the Paris region). In this sense, the authority is in this regime a monopolistic ‘entrepreneur’ as no services will appear without its action or order. Within these systems and taking asset ownership as a main classification criterium, a distinction can be made between regimes based on concessioning and on public ownership.

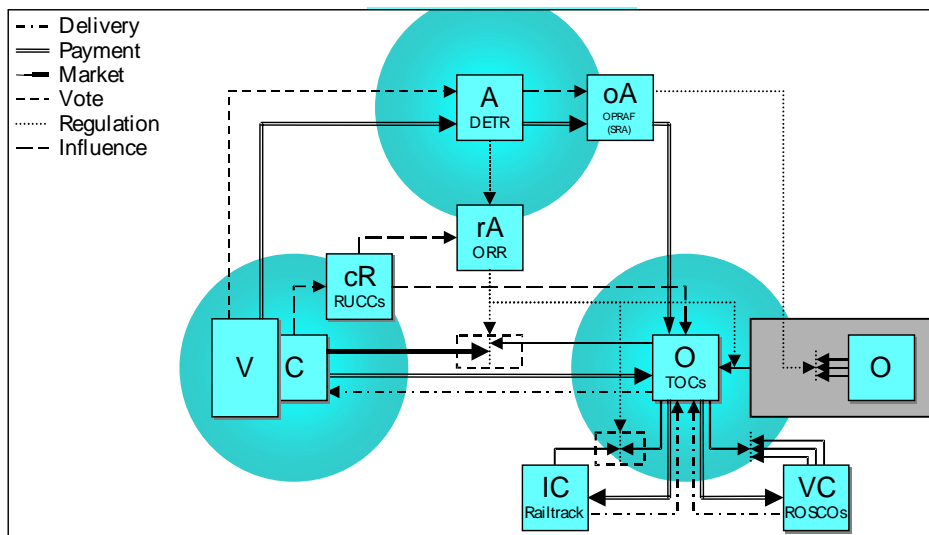
In *concessioning* the authority selects a company (see Figure 3.7) to set-up and operate public transport services (usually a network) and this company is usually the owner of its installations and vehicles (an example can be found in France in Rouen). The selection procedure can take place according to various procedures (such as direct selection, negotiations after pre-selection or competitive tendering). A good example of this, combined with a separation between the ownership of infrastructure, rolling stock and the operation of passenger transport services is the way in which the British railways have been tendered to a number of operators. Figure 3.8 provides an overview of the original setting which was subsequently amended with bankruptcy of Railtrack and the replacement with Network Rail.





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Figure 3.7: Concession and delegated management



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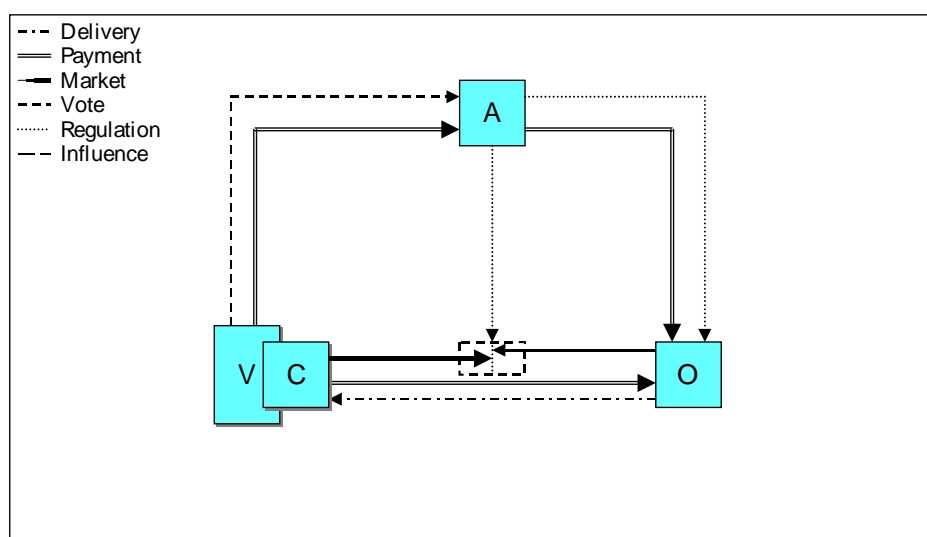
Figure 3.8: The original 'Franchising' of the British railways

Notes:

- ◆ DETR: Department of the Environment, Transport and the Regions
- ◆ OPRAF: Office of Passenger Rail Franchising
- ◆ ORR: Office of the Rail Regulator
- ◆ Railtrack: Owner and operator of infrastructure
- ◆ ROSCO's: Rolling Stock Leasing Companies
- ◆ RUCC's: Rail Users Consultative Committees
- ◆ TOC's: Train Operating Companies

In public ownership regimes two forms can be distinguished. In the pure form of public management (see Figure 3.9) the vehicles and other installations are owned

and run by the authority directly by its own administration (this can be found in smaller French cities, such as in Carcassonne), or through a publicly owned company at arm's length (this can be found in a few larger French cities, such as in Marseille). Alternatively, in *delegated management* (see Figure 3.7), the authority makes the assets available to a (private) operator to whom the authority delegates the management of the network (this can be found in many French cities, such as Lille or Lyon). Here too several procedures can be used. The cases of *delegated management* and *concession* can be thought of as a continuum between to extremes. Such arrangements lead to a wide scope of contracts giving more or less operational, commercial and investment risks to the operators and giving them more or less service design freedom. It is not possible to represent all details of such relations with these triangular graphs. The specific distribution of decision-power to the actors involved will be further detailed in the next section. Those graphs (see from Figure 4.1 to Figure 4.4) have to be seen in conjunction with these.



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Figure 3.9: Public monopoly

Besides its role as initiator, the authority retains in this regime also a role in the licensing of operators and as 'watchdog' of 'referee' setting a number of rules of the game. It should be noted that these various roles of the authority do not necessarily have to be fulfilled by the same authority. Perhaps, even, they should not be fulfilled by the same authorities such as to avoid conflicts of interest.

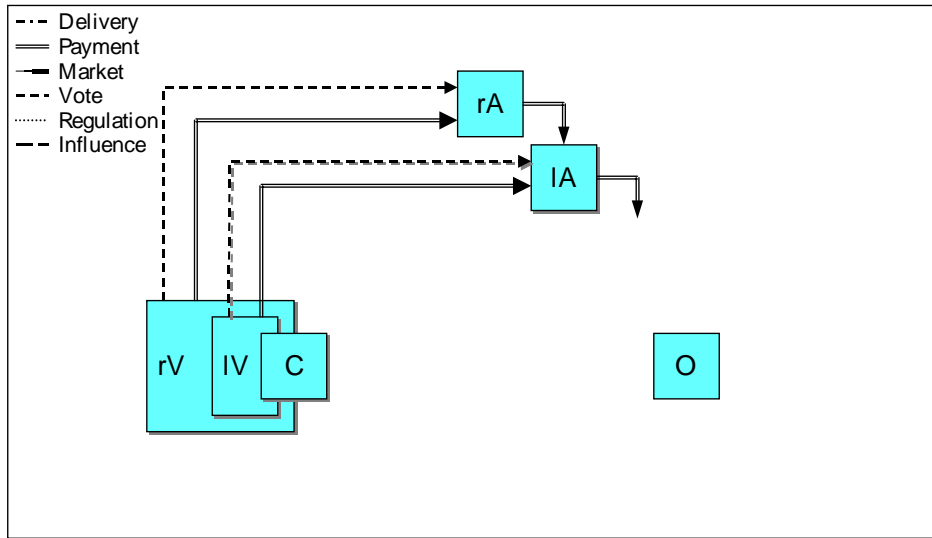
### 3.1.3 Various roles of the authority in both market initiative and authority initiative

Summarising, authorities can play several roles, both in market initiative regimes and in authority initiative regimes:

- ◆ *Licensing authority*: to assess the compliance of potential operators with technical standards and the fulfilment of juridical requisites (i.e. granting access to the profession) in all regimes,
- ◆ *Authorising authority*: to judge the desirability of actual market entry by autonomous licensed operators (i.e. granting access to the market in market initiative regimes),
- ◆ *Concessioning authority*: to take the initiative to create a transport service concession and to select (by competitive tendering or otherwise) a licensed operator for the concession (i.e. granting access to the market in authority initiative),
- ◆ *Regulatory authority*: setting the ‘rules of the game’ for operators present on the market, together with the actual *watchdog* or *referee* monitoring and enforcing the rules of the game in all regimes,
- ◆ *Enterprising authority*: when the authority creates and bears the entrepreneurial risks on transport services she creates either by owning a public transport company (or non-corporatised internal division producing transport services) or by outsourcing the production of services she has designed. This either under authority initiative (legal public monopoly) or under market initiative (the services created by the authority have to be granted an authorisation by the authorising authority), and
- ◆ *Subsidising authority*: for two purposes: stimulate the general supply of services and redistributing wealth to politically chosen target groups in society (such as handicapped, elderly, unemployed,...).

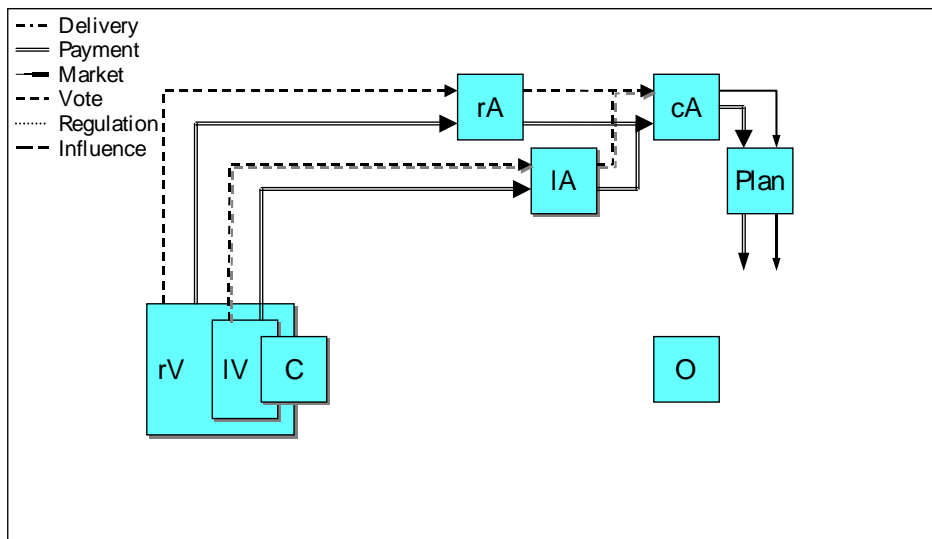
It is essential to distinguish these various roles in order to describe the functioning of organisational frameworks. It is also important to note whether these roles are or are not fulfilled by distinct authorities, and to note their mutual relations.

In many cases, several levels of authorities will be present, such as local, regional and national authorities. It is important to represent adequately the relations that may or may not exist between these various levels, both in terms of financing and in terms of co-operation, e.g. in the creation of co-ordinative bodies such as *Zweckverbände* and *Verkehrsverbände* in Germany. Figure 3.10 and Figure 3.11 give simple representations of such situations. Figure 3.12 gives a representation of a situation where some companies, in this case authority-owned companies, get preferential treatment in the obtention of authorisations by means of direct or indirect subsidies or grants which are not accessible to private operators.



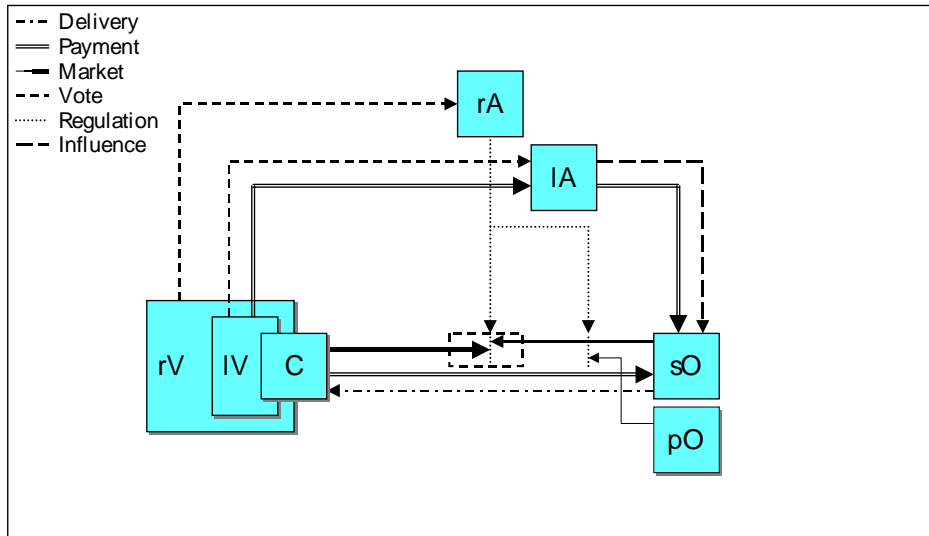
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Figure 3.10: Multiplicity of authorities involved in financing public transport



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Figure 3.11: Authority co-operation (cA) and common planning agency (Plan)



TOI report 740/2004

Figure 3.12: Preferential treatment by means of (indirect) subsidy to authority-owned company (sO) compared to private operator (pO)

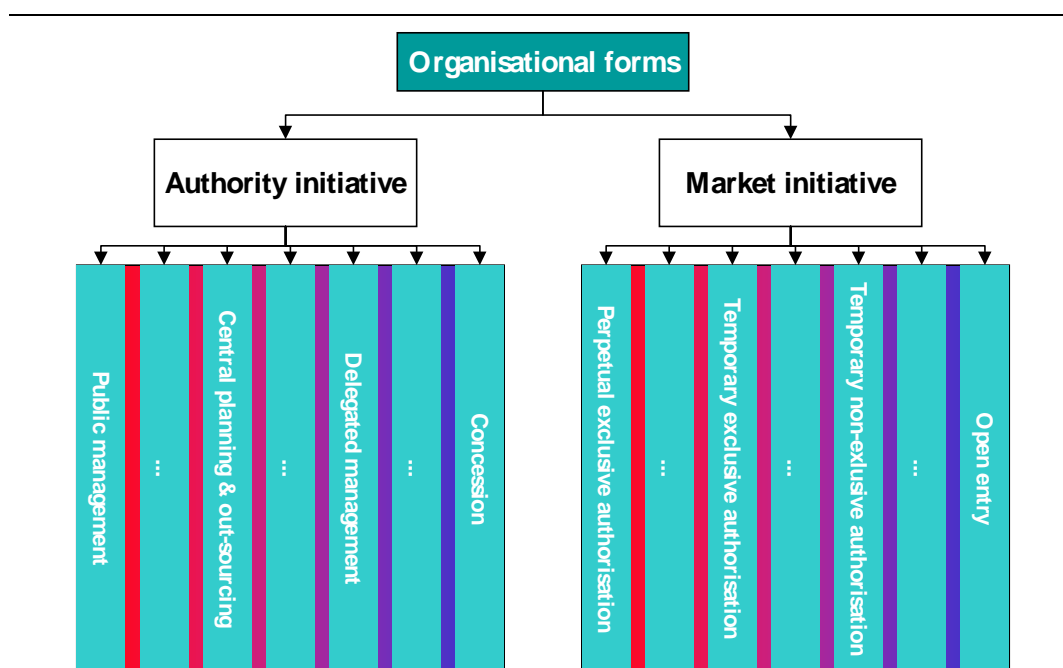
### 3.2 Variations

It is important to state that the classification presented above only represents a number of ‘pure organisational forms’. Few real-world examples will fully correspond to any of these organisational forms. Only a careful reading and understanding of the legal, regulatory and organisational frameworks will be able to deliver the necessary information to position each real-world organisational form in relation to these ‘pure organisational forms’.

#### 3.2.1 Continuum of organisational forms

Intermediate forms may be desirable, are possible and do exist in reality. Another way to represent this is to say that there is a ‘continuum’ of possibilities between, on the one hand, public management and (private) concessions and, on the other hand, strict authorisations and open market entry. Figure 3.13 gives a representation of this, using the same extreme points as in TOI report 740/2004

Figure 3.1, but emphasising here the continuum that exists in between these extreme points. In this graph, and for both authority initiative and market initiative, a gradual change can be perceived from the more open regimes, submitted to more market pressure and/or private entrepreneurial freedom (in blue) to the more controlled, static and closed regimes in terms of market entry (in red).



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Figure 3.13: Organisational forms: continuum

In real world cases, ‘delegated management’ and ‘concessions’ can sometimes be observed in combination with each other. Assets can, e.g., partly be brought by the authority (such as infrastructures and specific rail rolling stock) and partly by the operator (such as buses). Parts of the risk related to the investment can be born by the authority rather than fully by the operator, e.g. by guaranteeing a take-over of the investments and the personnel at the end of the contract. Parts of the production cost and parts of the revenue risk related to the operations can also be born by the authority.

Observing the real world, ‘two step regimes’ will also be discovered. Two (British) examples can be given to illustrate this point. In market initiative regimes, e.g., the authority can be given a role as complementary initiator of (social) services. In the British bus sector the initiative to create public transport services is left to autonomous licensed operators. The local authorities do however intervene as a second order entrepreneurs in order to create additional ‘social’ services that can not be provided on a profitable basis by the private market initiative. These are usually additional evening and Sunday services and services to very low population density areas. Such services are however outsourced to private operators selected by competitive tendering. A combination in the reverse order is also possible and is encountered in Britain in the railway sector. There an authority (in this case the Office of Passenger Rail Franchising<sup>8</sup> on behalf of the Department of the Environment, Transport and the Regions) was created to take the initiative to create railway services by means of tendering (the so-called ‘franchising’). In a second step the existing railway companies (and possibly also entrants) are allowed on the basis of their own initiative to venture

<sup>8</sup> Currently the *Strategic Rail Authority*.

into each other's territory up to a limit of 20% of the total revenues of a franchisee, this according to the so-called stage two of the 'moderation of competition' (Office of the Rail Regulator, 1998).

A different version of the combination of market initiative with authority initiative is also present in the current German local passenger transport legislation. According to the principles of that legislation autonomous market entry regulated by a system of authorisation provides for all profitable services. Additional non-profitable services can then be provided but have to be tendered by the responsible transport authority. However, these legal principles do not always correspond to the reality as various subsidies and cross-subsidies blur the distinction between profitable and non-profitable services.

### 3.2.2 Confusions

The authorisation regime when dominated by authority-owned companies is, interestingly, often confused with the public management situation under the authority initiative regimes. These organisational forms do indeed resemble each other as in both case one publicly-owned company provides all services. They are however legally speaking fundamentally different. Seen from a dynamic point of view, the monopoly position of the public company in the authorisation case is conditional upon the validity period of the authorisation or upon the preservation of specific protective regulations pertaining to the allocation procedure for the authorisation. In this sense an entry threat at the moment of the renewal of the authorisation can not legally be ruled out. In the public management situation on the contrary, no entry threat legally exists.

We have been able to observe this confusion, or at least the lack of a clear distinction between both cases, in various discussions on regulatory reform. Policy-makers as well as operators often have the understandable tendency to amalgamate both situations as the practice of the authorisation system where companies are owned and controlled by the authority, such as in most cases in the Netherlands and Germany, has indeed become almost identical to a situation where the authority has the legal initiative. This illustrates how discussions can be hampered by the lack of adequate legal information besides the understanding of the day-to-day functioning of the systems in place. In the context of a discussion on a regulatory reform, the difference between both situations should however carefully be kept in mind as it determines the acceptability and legal feasibility of some reforms. A regulatory reform towards less regulation is, e.g., much easier to realise starting from a legislation based on authorisation than from a legislation based on concessioning.

An example of such a confusion is that between the legal position of the French publicly owned transport companies (*Régies* and assimilated) and the position of the German publicly owned transport companies (*Stadtwerke* and assimilated). The French public transport law (outside the Paris region), which is based upon an authority initiative regime, gives the transport authority the first right to create passenger transport services. In doing this it also gives the authority the right to decide whether these services will be provided directly by the authority (own production or own company with specific public status) or whether the services will be delegated to a different manager (using a specific awarding procedure).

The German public transport law, which is based upon the principle of market initiative, gives the first right to create passenger transport services to the market. This does not give any specific legal right of first initiative to authority owned companies. However, the low profitability of those services together with, on the one hand, some features of the German law which until recently strongly protected the incumbents and, on the other hand, a widely used practice of cross-subsidising public transport with the profits of other urban utilities (such as electricity distribution) resulted in a situation where publicly-owned companies were not directly threatened by the existing German legal requirement to competitively tender all unprofitable services. This situation may change with the current tendency in Germany to interpret the law in a stricter sense and with the increase of competition in the electricity sector which may soon make cross-subsidisation impossible. This example further illustrates the point made above that an adequate understanding of the existing legal situation is essential for the analysis and design of regulatory reform.

### **3.2.3 The law versus the practice**

In a number of cases, the practice will not be in full accordance with the wording of the legal base on which public transport services are supposed to appear. Examples are 'tolerated' paratransit services which compete with the regular public transport services, or the various forms of deficit-coverage that publicly-owned companies sometimes get and which are not accessible to private operators with which they are supposed to compete.

In a context of change, and for the analysis of the barriers to change, it is essential to distinguish clearly between law and practice where relevant. In some cases practices will be easier to change than the law, in other cases changing the law will be the only way for practices to evolve.

### **Checklist**

**Note**

The checklist for this whole chapter is included at the end of the document!



## 4 Levels of planning and control in public transport

The first chapter gave a general representation of the main relationships between involved actors in the passenger transport sector. They did not, however, give a full representation of the allocation of decision power between the actors involved. The following graphs will focus on that aspect by distinguishing between three main levels of decisions.

### 4.1 Strategy, tactics and operations

Public transport is a service provided on a market; i.e. there is a supply, there is a demand and there is a price – even low or subsidised – to be paid to use the service. Similarly to other markets for goods or services and whatever the legal and regulatory setting, a number of decisions will have to be made before passenger transport services can actually be produced and sold. It is generally accepted that planning and control systems within companies can be divided into hierarchically ordered types of activities which differentiate themselves according to the scope of the planning issues addressed and the planning horizon. This can be done for public transport just as for other products offered on markets. Based on various theoretical definitions (see Anthony, 1988; or Hellriegel and Slocum, 1992), we will use here the following denominations<sup>9</sup>:

**Strategic level:** strategic planning is involved in the formulation of general aims and in the determination in broad terms of the means that can be used to attain these.

*In short: what do we want to achieve?*

**Tactical level:** tactical planning is about making decisions on acquiring means that can help reaching the general aims, and on how to use these means most efficiently.

*In short: what product can help us to achieve the aims?*

**Operational level:** makes sure the orders are carried out, and that this happens in an efficient way.

*In short: how do we produce that product?*

Figure 4.1 translates these to the public transport sector, without yet referring to any specific legal or regulatory setting:

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<sup>9</sup> This division has been used in Van de Velde (1992) in a first attempt to compare organisational forms in public transport. It has subsequently been redeveloped in Van de Velde (1997).

- ◆ At the strategic level we can find things such as the general aims and service characteristics, which include such topics as the profit and market share aims, the general description of the services that will be provided, the area of supply, the definition of the main target groups and the positioning of the services in relation to substitutes and complements (intermodality). We define this level as being at the core of ‘entrepreneurship’ and the actor responsible for these crucial decisions as the ‘entrepreneur’ as he takes the initiative for the creation and supply of services, thereby takes some form of risk, and as he delineates at least the main characteristics of the services that will be provided.
- ◆ The tactical level translates these aims into detailed service characteristics. The actual ‘design’ of the services takes place at this level. We find here the traditional parameters of public transport such as the definition of the routes, timetable, vehicles and fares, but also ‘softer’ aspects such as the image of the services and the provision of additional services to the passengers (such as catering, news, etc.)
- ◆ At the operational level we find the translation of the tactical aspects into day-to-day practice. This includes the management of the sales staff, of the drivers, of the vehicles and of the infrastructure to ensure the realisation of the services according to the tactical planning.

The terms indicated in the figure are examples relating to the case of simple bus networks for small-scale cities. The terms will obviously be longer when fixed infrastructures are involved, such as is often the case in larger cities.

Level	General description	Decision	
		“Software”	“Hardware”
<b>Strategic</b>  Long term (5 year)	<i>What do we want to achieve?</i>	<u>General goals</u> Transport policy Market share Profitability  <u>General description of the services</u> Area Target groups Intermodality	
<b>Tactical</b>  Medium term (1-2 year)	<i>Which services can help to achieve these aims?</i>	<u>Detailed service characteristics</u> Fares Image Additional services	Vehicles Routes Timetable
<b>Operational</b>  Short term (1-6 months)	<i>How to produce these services?</i>	<u>Sales</u> Selling activities Information to the public ...	<u>Production</u> Infrastructure management Vehicle rostering and maint. Personnel rostering and mnngt

Figure 4.1: Levels of planning and control in public transport

In opposition to the *hardware* side, which is the production of vehicle-kilometres, we define the *software* side as everything that will help to *sell* the vehicle-kilometres, i.e. transforming them into passenger-kilometres. Seen from a dynamic perspective, there has of course to be a feedback between the decision levels involved, notably based on the feedback provided by (potential) clients.

Moreover, there will ideally be a link between the hardware and software side at the tactical level to ensure an adequate evolution of the services, in accordance with market needs and the stated general aims. Figure 1.4 does not, for clarity's sake, focus on these dynamically essential links and feedback of information. It focuses on the way management decisions pertaining to the appearance of public transport services on markets are ordered, whatever the organisational form in place and whatever the extent of public intervention. Up to this point nothing is said, neither on the exact aims of the public transport system (strategic level), nor on the identity of the actors involved at the various levels – leaving open whether these are one or several public or private companies, authorities or other actors, nor on the competitive nature of the organisational form.

As for any production, one or several actors can be responsible for each of the decisions presented in the table. In general the strategic-tactical-operational chain can be seen as a (series of) principal-agent chain(s). Numerous forms of organisation of this chain of principal(s) and agent(s) are possible. The following graphs will provide an illustration of a few of these.

## **4.2 Representation of organisational forms using the above concepts at system level**

Using the levels of planning and control as presented above, together with the insights provided by the classification of organisational forms, it becomes possible to draw graphical representations of both existing and conceptual organisational forms in public transport.<sup>10</sup> A few organisational forms will be presented hereafter. The actors involved, their number and the way in which they come to play will depend on the organisational framework in place. In some cases all actors will be part of the same organisation or company ('in-house' or integrated production case), in other case contracting-out will be used and the actors involved will be part of different organisations or companies. The following examples illustrate that the contracting out question is present at two different levels: for the link between the strategic and the tactical level and for the link between the tactical and the operational level.

The focus here is on the role of the authority (or authorities) as concessioning authority, taking the initiative for the creation of services and heading a 'principal-agent' chain, and in its role of authorising and regulatory authority when controlling market initiative. The role of the authority as licensing authority (access to the profession), enterprising authority (owner of transport companies) and subsidising authority is, for clarity's sake, represented in the graphs. The democratic relationship between 'the People' and the (transport) authority is also added to the principal-agent chain, although, for clarity's sake, only under authority initiative.

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<sup>10</sup> See Van de Velde and van Reeve (1996) for an earlier description of such models, at greater length, in a report on the implementation of tendering in public transport in the Netherlands, written for the Dutch Ministry of Transport.

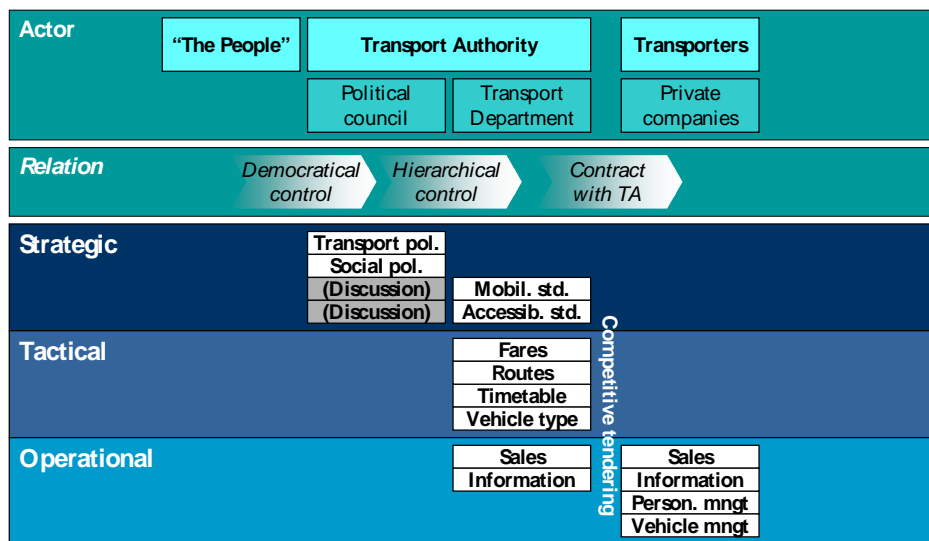
Key for reading the figures:

- ◆ The first row of each figure indicates which actors are involved in the organisational form described. The nature of each actor is given below its general name.
- ◆ The second row of each figure indicates by arrow-shaped blocks which control relationship there is between the actors involved.
- ◆ The lower part of each figure indicates which actors are responsible for the various decisions presented in Figure 1.4 by positioning each decision below the responsible actor. A white block indicates that the actor under which the block falls is the main or sole responsible for that decision. A shaded block indicates that the actor concerned also has some decision power on the item located immediately to the left or right. Text between brackets and within shaded blocks indicate the type of influence given to the actor considered. The following examples are used in the tables (between quotes here): the ability to 'discuss', to make 'proposals', to set 'minimum standards' by means of contract, to create fare 'rebates', to impose vehicle 'accessibility standards', to require service 'co-ordination' and to require service 'publication'.
- ◆ Text located vertically indicates the instrument or selection mechanism used to put in place the relationship represented in the second row of the figure.

#### 4.2.1 Example 1: Central planning and tendering of the realisation

The transport authority determines a number of transport and social policy goals which then serve as planning framework for its own transport department. By doing this, the authority states its 'public service aims'. The transport department is obliged by the authority to contract out the realisation of all (or part of the) planned services to private transport operators using competitive tendering procedures (see Figure 4.2).

This organisational form, also known as 'Scandinavian model' or 'London model', can be witnessed amongst other places in the Copenhagen area. In this area several regional and local governments co-operate to form a transport authority (the political board of *HT*) which has its own planning body (*HT – Hovedstadsområdets Trafikselskab*), itself resulting from the split-up of the former regional transport company into a planning division and a bus division. *HT* organises the tendering for the realisation of the services it has planned.



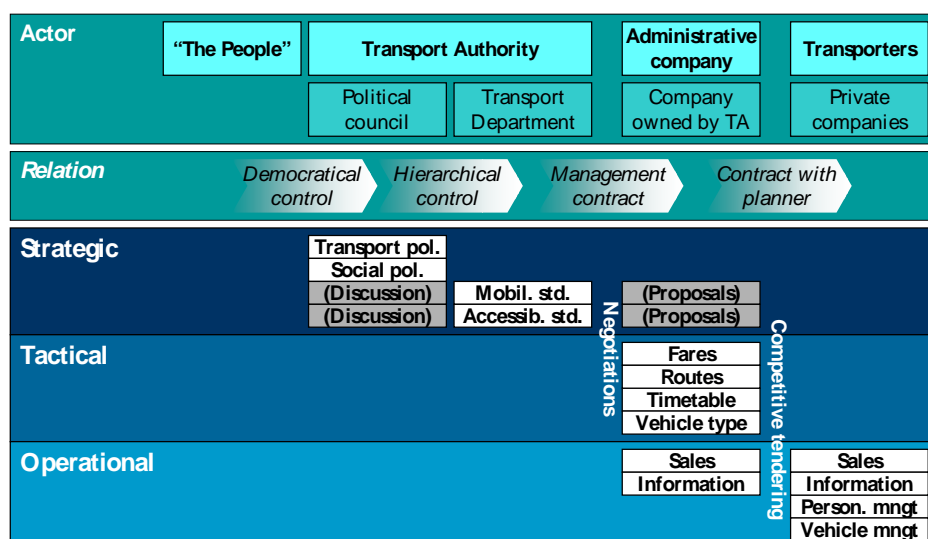
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Figure 4.2: Central planning with route-by-route tendering of the realisation

#### 4.2.2 Example 2: Central planning at arm's length and tendering of the realisation

The transport authority determines a number of transport and social policy goals which then serve as planning framework for its own transport planning company. By doing this, the authority states its 'public service aims'. This first relationship is organised by a kind of management contract. This contractual relationship is not the result of a selection mechanism based on competition, although this could – conceptually at least – be the case. This separate transport planning company is obliged by the management contract to contract out the realisation of all (or part of the) planned services to private transport operators using competitive tendering procedures (see Figure 4.3).

This organisational form is akin to what is known as the 'Scandinavian' or 'London model' with the difference that it includes a better formalisation of the relationship between the strategic and the tactical level by means of a separate planning body itself submitted to a (non-competitive) management contract. Such a organisational form was used in the Malmöhus region in Sweden until a recent local authority merger after which the arm's length relationship between planner and authority disappeared due to the scepticism of one of the merging authorities about this organisational form.



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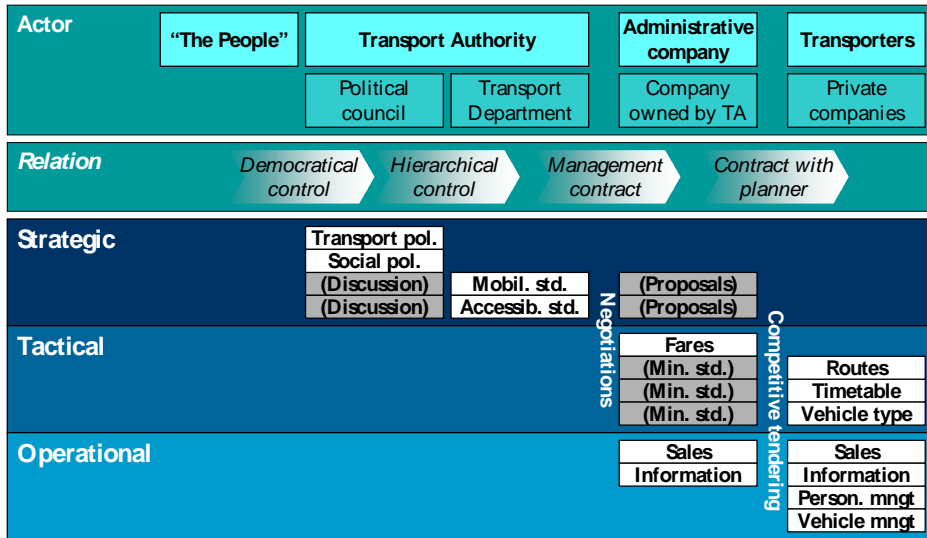
Figure 4.3: Central planning at arm's length and tendering of the realisation

### 4.2.3 Example 3: Tendering of the realisation with re-design incentives in sub-areas

This organisational form is similar to the previous one with the difference that transport operators are given some freedoms to re-design the services in their area of operation and that contracts are organised at the level of small networks (sub-areas) and not at the route level. The definition of the 'public service aims' takes place in the same way as in the previous organisational forms. The planning company acting as an agent of the authority only influences the tactical decisions of the operators by pre-determining a 'minimum level of service' (which, if set at a high level, limits considerably the freedom of the operators) and an integrated fare system. The re-design freedoms of the operators are limited in order to maintain service integration (correction of market failure to realise network benefits). The planning company sets the fares and carries the revenue risk, taking into account the budget allocated by the transport authority, while incentivising the operator by paying a passenger(-km) based fee (see Figure 4.4).

This organisational form is similar to the essence of the so-called 'Adelaide model' (South Australia), albeit that the real world implementation of this organisational forms in Adelaide was less thorough and ambitious than it potentially could have been.<sup>11</sup>

<sup>11</sup> See Radbone (1997) for more details on the implementation and Cox and van de Velde (1998) for the comments given by a conference workshop on this implementation.

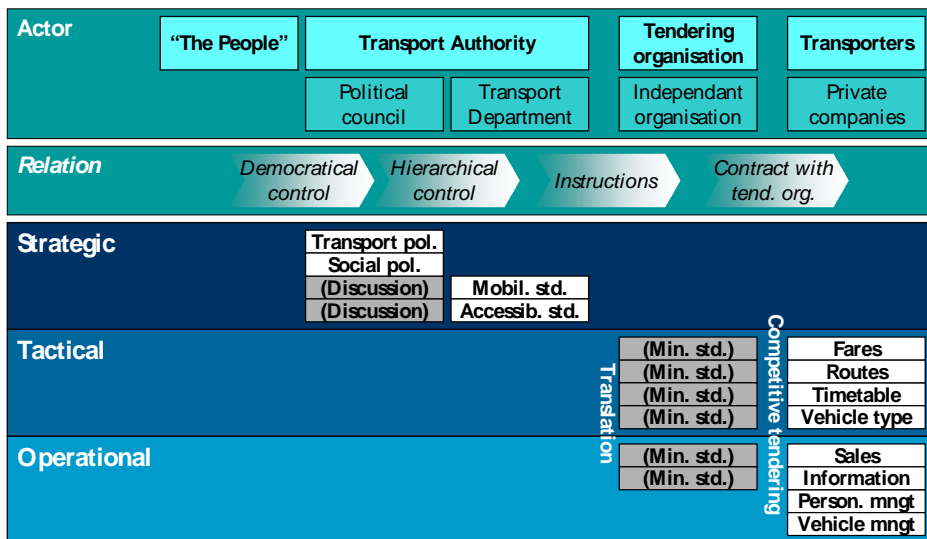


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Figure 4.4: Tendering of the realisation with re-design incentives in sub-areas

#### 4.2.4 Example 4: Tendering of the design and realisation (concessioning)

This organisational form goes a step further in giving re-design freedoms to the transport operators. These are limited by the minimum standards defined by the concessioning agency (such as the *passenger service requirements* defined in Britain by the *Office of Passenger Rail Franchising*) which organises the tendering of all services, area-wise, according to the instructions of the transport authority. The split between the ‘transport department’ of the authority and the tendering agency introduces a relationship at arm’s length but is not strictly necessary. The authority could also set the minimum standards and levels of the service itself, thereby determining the ‘public service obligations’ (see Figure 4.5).



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Figure 4.5: Tendering of the design and realisation (concessioning) (BR Franchising)

This organisational form, which was used for the franchising of British Rail, is akin to the French practice for urban public transport networks. However, the distinction between the transport department of the authority and the concessioning agency either does not exist in the French practice or is not as strict as presented in this organisational form. Furthermore, the difference between this organisational form and the practice in urban networks in France is located in the balance of power between operator and authority. While the operator has a rather strong position in negotiating the contract in France, its position is often weaker during the contract as most of its 'freedoms' often boil down to being allowed to *suggest* modifications to the services to the authority, not being allowed to *decide* on modifications to the services.

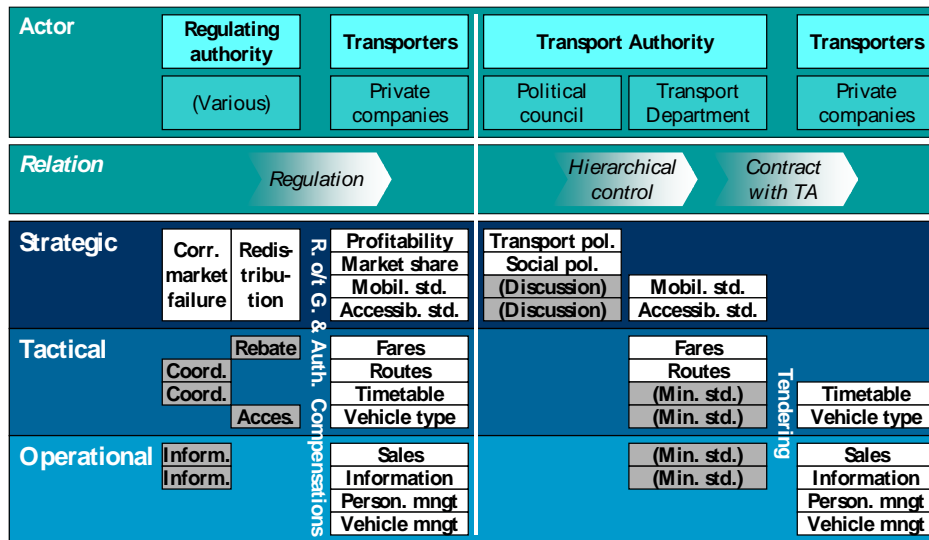
#### 4.2.5 Example 5: Free competition with (light touch) regulation

In this example, profitable services appear autonomously out of a market process. Some subsidies may indirectly be involved in the appearance of the commercial services (such as compensation of fare rebates for specific target groups, compensation of fuel duties in specific areas, etc.) By these means the authority may achieve some redistribution. Regulation may be needed to correct market failures without necessarily closing off all possibilities for competitive threat and autonomous innovation. Such a 'light touch' regulation could be devised to avoid the most negative consequences of free competition which have been observed in Britain. The light 're'-regulation advocated in the bus sector in Britain, based for example on quality partnerships between operators and authorities, is an example of such a organisational form (see Carr, 1997). Besides anti-predatory measures, such regulation can include various 'rules of the game', such as:

- ◆ obligations to operate the services registered, to carry passenger according to published fares and timetables, etc.,
- ◆ provisions for service co-ordination, integrated information and integrated ticketing,
- ◆ an obligation to use vehicles accessible for prams, handicapped, etc.,
- ◆ an obligation to use specific fares, to provide a minimum level of frequency, etc.

It has to be remembered that an increase in requirements/obligations will in most cases result in fewer services being profitable. Such requirements/obligations do not, however, influence competition as long as they are equally valid for all incumbents and entrants (see the left hand part of Figure 4.6). Additional, non-profitable services can be ordered by the authority on the basis of negotiation and/or tendering procedures. The transport and social policy aims, within the budget limits, define the extent of those services (see the right hand part of Figure 4.6).





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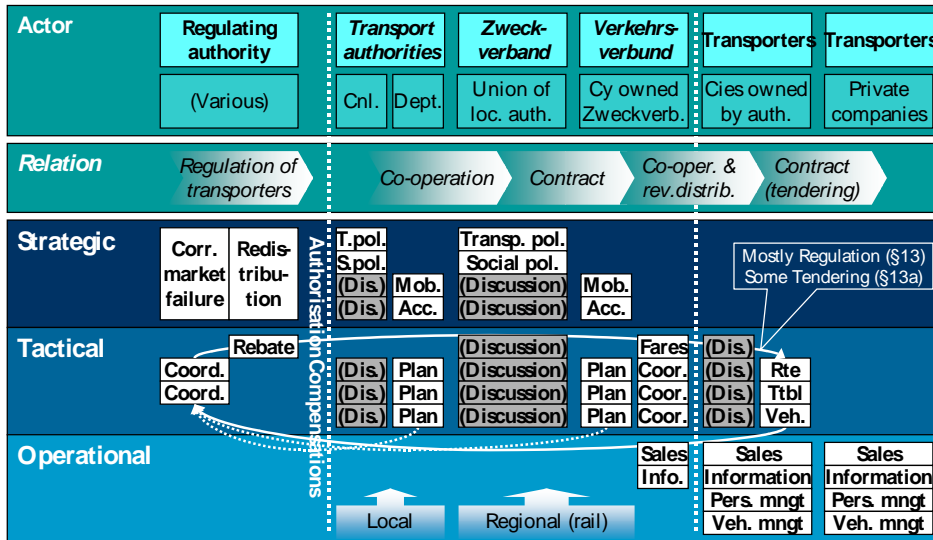
Figure 4.6: Free market (open access) with (light touch) regulation and additional ordering

The operators acting upon their own initiative in this setting are free to use sub-contracting in whatever way they like. This means that they may want to sub-contract (parts of) the operational level to different (local) operators, they may also want to give to these operators more or less tactical powers (service re-design incentives) and may even want to contract out the whole design and operation. In all cases the selection mechanisms that these initiative takers can use vary from open competitive tendering, at one extreme, to direct selection and negotiation at the other extreme. In other words, the whole scale of organisational forms presented above in the context of authority initiative, is also available to the private entrepreneur *within* this organisational form.

#### 4.2.6 Example 6: Verkehrsverbund (hybrid regime)

The following example is a, rather complex, graphical representation of the main aspects of the distribution of decision-power between authorities (in their various independent en co-operative configurations) in a German *Verkehrsverbund*. This is only one example as each *Verkehrsverbund* has its own particularities.

This German setting is hybrid in two senses. First of all it is hybrid in a legal sense as it combines on the one hand a regime which is legally based on market initiative by (originally) private and profitable operators, where independent operators have under potential competition to request for an authorisation to operate at a particular authority and, on the other hand, a constellation of co-operating local or regional authorities charged by law to determine regional transport plans (a feature more related to authority initiative) which have to be taken into account by the authorities issuing the authorisations. Secondly it is hybrid in practice as most urban operators are actually owned by local authorities, benefit from financial supports of various kinds which are not accessible to private operators, and co-operate in the establishment of the transport plans by the authorities.

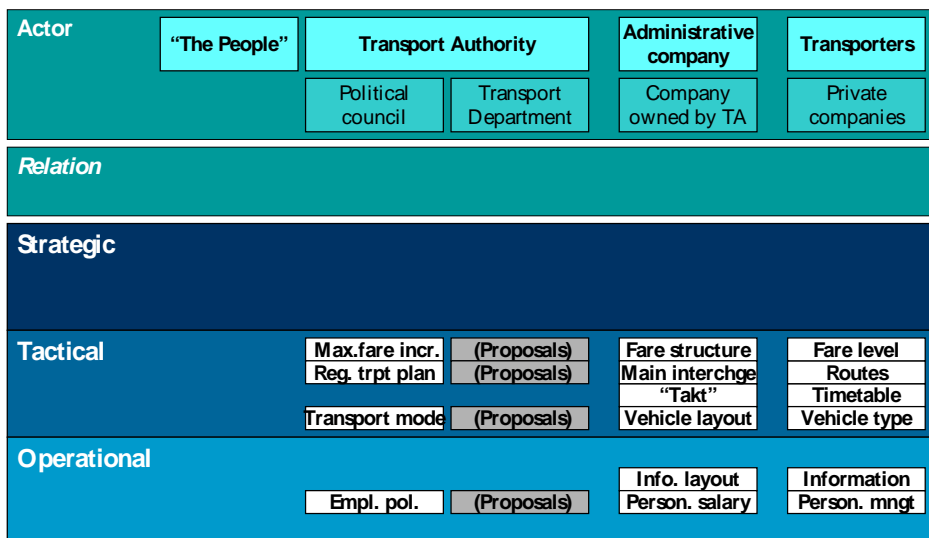


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Figure 4.7: Verkehrsverbund (one example !)

### 4.3 Sharing decisions between actors

In many cases decisions pertaining to one topic, such as fares or routes, will not be attributed totally to solely one actor. As far as fares are concerned, it is possible to observe – without implying that this is a good or a bad thing – that a political council wants to retain decision power on maximum average fare increases, sometimes even on fare levels, that the fare structure is determined by a co-ordinating body charged with public transport planning and that the actual fare level is determined by the transport operators within the limits set by the other actors. Figure 4.8 gives an illustration of how such shared decisions can be represented in the graphs as developed above.



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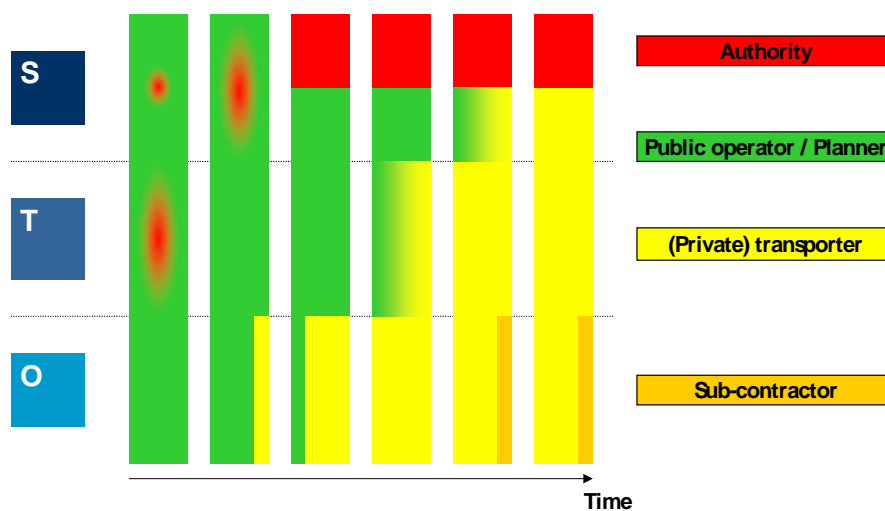
Figure 4.8: Sharing decisions between actors

## 4.4 Example of evolution (path) of organisational forms

Organisational forms in public transport evolve. Figure 4.9 is one way to represent this graphically as far as the levels of planning and control are concerned. This does not include the financial side however. This figure depicts, *as a purely hypothetical example*, the following evolution:

- ◆ The starting point is a publicly-owned operator who is subject to a diffuse authority influence which takes mostly place at the tactical level (fares, bus stops, routes) and to a lesser extent at the strategic level (social aims for the public transport services).
- ◆ The first step entails a refocussing of the authority's intervention to the strategic level (specifying the aims of the public transport system rather than the means) and leaving more design freedom to the operator. No contract exists yet between authority and operator. The operator is also requested to contract out parts of its services by competitive tendering to different transporters in order to get a comparison point for productive efficiency and induce an efficiency campaign within the public operator's organisation.
- ◆ The second step entails a contractualisation of the relationship between the authority and the publicly-owned operator. At the same time a growing share of its production is sub-contracted to competitively selected transporters. The publicly-owned operator gradually becomes a planning organ with less and less own production.
- ◆ The third step entails a transfer of some service planning powers to the competitively selected transporters. The planning organ continues to set a number of co-ordinating rules to guarantee service integration between the selected transporters.
- ◆ The fourth and fifth step entail further transfers of planning powers to the transporters. The planning body becomes obsolete. The transporters are requested/allowed to sub-contract parts of their production if they so wish.

This is only an example, but the first three or four bars are adequate representations of the evolutions that have taken or are taking place in Denmark, Sweden and in London.



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Figure 4.9: Evolution of organisational forms

## 4.5 Strategy, tactics and operations seen at the actor level

It should be noted that the strategic, tactical and operational levels considered here are seen from the point of view of the appearance of transport services to the passenger, i.e. at the system level, *and not* from the point of view of a specific (private) transport operator involved in production somewhere in the chain of actors, i.e. at the actor level. Indeed, any such actor will have its *own* strategy, tactics and operations and these should not be confused with what is presented in the figures above.

From the point of view of an operator in the context of central planning with route-by-route tendering of the realisation (such as in Denmark, Sweden or London):

- ◆ Strategic choices would relate to the location of its operations, to the choice of its production expertise (e.g. only buses, or also rail systems, etc.),
- ◆ Tactical choices would relate to the decisions on the set of competitive tenders on which to actually make a bid, but also to the type of vehicles to buy or rent,
- ◆ Operational choices would then relate to all decisions related to actual production, including maintenance and personnel management.

### Checklist

**Note**

The checklist for this whole chapter is included at the end of the document!

## 5 Elements for the further analysis of relations between actors

A common theme for many organisational forms is the decision to “delegate”, “contract out”, “outsource” some part of the chain of decisions (STO) to other actors (contract on the market) or, on the contrary, to retain all decisions in one organisation (internal hierarchy). This results, mainly, in contractual relations between actors, where financial risks have to be divided, where additional incentive mechanisms of various sorts can be added (such as those relating to quality), etc. The existence of such contractual relations is furthermore not neutral in terms of management, such as the functioning of feedback between the operational level and the other levels. It has also to be linked with the theme of ‘corporate governance’.

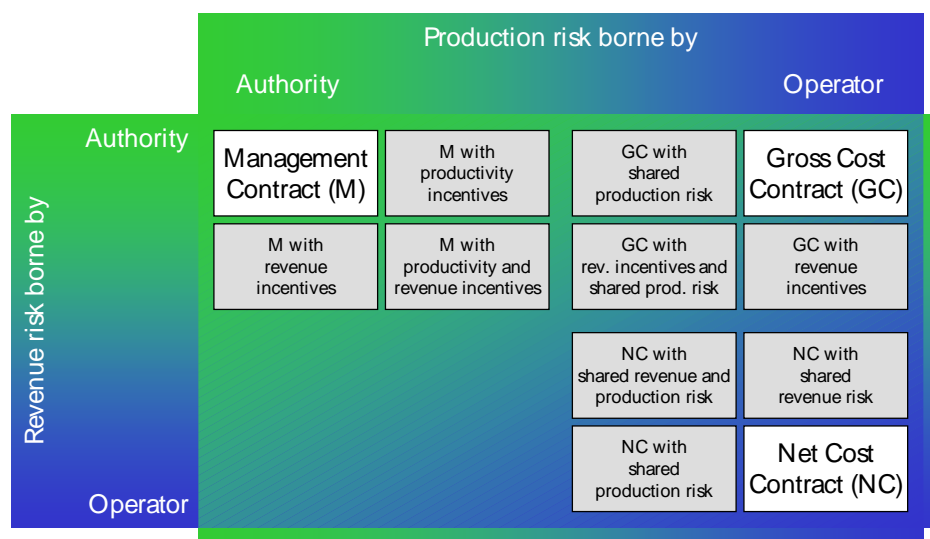
The following paragraphs will provide an introduction on some of the aspects that have to be used to analyse contractual relations.

### 5.1 Principal-agent theory

In theoretical terms, the analysis of contracts relates to the so-called ‘principal-agent theory’ (Vickers and Yarrow, 1988): "A general description of the agency problem runs as follows. There exists a principal and an agent - the owner and the manager of a firm, for example - who do not share the same objectives. The principal wants to induce the agent to act in his (the principal's) interests, but he does not have full information about the circumstances and behavior of the agent, and so he has a monitoring problem. This prevents the principal from successfully telling the agent what to do, for he cannot fully observe what is happening. In any event, he would usually want the agent's behaviour to depend on circumstances that perhaps only the agent can observe. Principal-agent theory is concerned precisely with this problem of information and incentives. It addresses the central question: What is the optimal incentive scheme for the principal to lay down for the agent?"

### 5.2 Risk division

Contracts in the public transport world usually divide between production cost risks and revenue risks. Risks can be shared in various ways as can be seen in Figure 5.1 for the case of a contract between a transport authority and a transport operator. The main distinction in this figure is between management, gross-cost and net-cost contracts. Yet many intermediate forms of contracts are thinkable as can be seen in the shaded boxes.



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Figure 5.1: Risk division

Analysing contracts in public transport, one should bear in mind that there has to be a balance between the incentives given and the instruments at the disposal of those who are submitted to the incentives. For example: a net contract where the authorities are responsible for defining the fare system and level can easily be unbalanced and a source for conflict; alternatively: when an operator receives tactical freedoms, he should also bear an increased financial responsibility on the consequences of his tactical decision and possibly also an increased contract period.

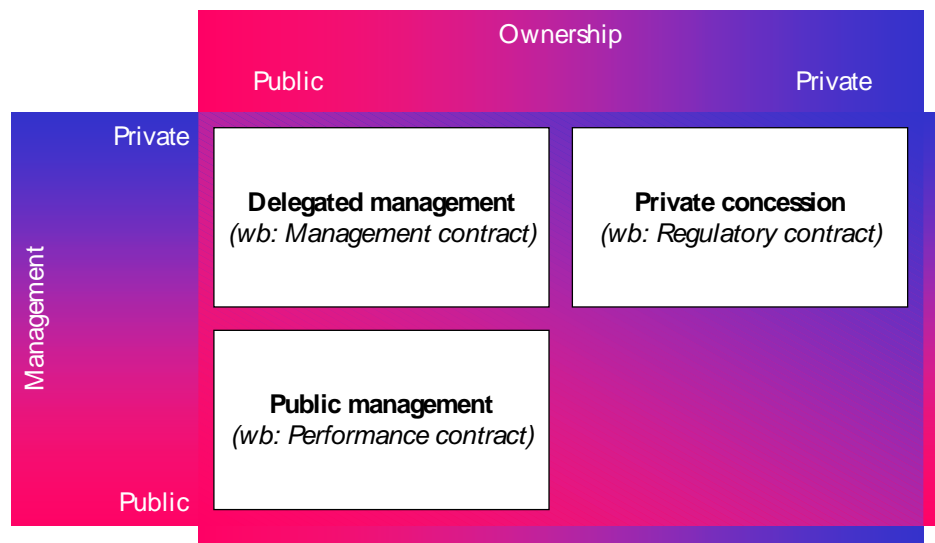
In other words, a further analysis of contractual relations will have to integrate various perspectives of vision on the contract. The financial perspective is a very important one, especially in a sector where the financial intervention of authorities is not only for financing but – mostly – for subsidising purposes.

### 5.3 Ownership versus usage<sup>12</sup>

In urban public transport we can encounter situations where “the authority” is the owner/provider of some means of production (tunnels and stations, rolling stock, garages,...) while these are used by another (private) actor (“the operator”). This is, e.g., the usual situation in most large French cities (except the Paris region). Situations also occur with both public ownership and public operation, or with both private ownership and private operation. Figure 5.2 gives a representation of the possible combinations of public or private ownership with public or private management indicating different types of contracts between government and state-owned enterprises, private managers of state assets and private monopoly, respectively. The figure makes the link between the organisational forms

<sup>12</sup> This paragraph is part of the paper Van de Velde, D.M. (to be published), “Organisational forms and entrepreneurship in public transport. Part 2” (based on van de Velde, 1997).

presented earlier in ‘the tree’ (in bold in the figure) and the classification used by the World Bank in its study “Bureaucrats in Business” (1995, ch. 3) (between brackets and in italics in the figure).



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Figure 5.2: Private vs. public management and ownership

According to the World Bank study (1995), the way in which the three problems of information asymmetry, rewards and penalties, and commitment are solved in the contract is determinant to their success. The study states that *performance contracts* rarely seem to improve incentives – and may even do more harm than good – mainly because the contracting process gives public managers the opportunity to capitalise on their informational advantage by negotiating multiple soft targets. As far as *management contracts* are concerned their success seems to be dependent upon the usage of a competitive process (both competitive bidding for the management and/or competition in the market) but, according to the World Bank, the large costs of obtaining the information needed to negotiate, monitor and enforce such contracts tend to confine them to such sectors where technology is relatively static and quality is easily compared. Finally, the success of *regulatory contracts*, which according to the World Bank result on average in the best performance, seems to be dependent upon careful design and, in some cases, of simultaneous usage of direct competition.

## 5.4 Fixed vs. flexible planning<sup>13</sup>

The classification presented in the World Bank study implicitly refers to the tactical level. In the context of tendering, decision making at the tactical level can be organised in different ways. The ‘tactics’ can be determined *prior* to the contracting out and the operators may have either no ‘tactical’ powers, such as in

<sup>13</sup> This paragraph is part of the paper Van de Velde, D.M. (to be published), “Organisational forms and entrepreneurship in public transport. Part 2” (based on van de Velde, 1997).

London and Copenhagen, or some ‘tactical’ powers during the contract period in the form of re-design incentives, such as in Helsingborg and Sundsvall (Sweden) or Adelaide (Australia).<sup>14</sup> Alternatively, the ‘tactics’ can be determined *during* the contracting out (as suggested in the Netherlands and put in practice, to a limited extent, in France) either simultaneously with the contracting out of the operational level or not, but here too contractual re-design incentives can be given for the length of the contract period. The British rail franchises are examples where bidders win on the basis of their proposals’ quality and price but where operators also enjoy a regulated service redesign freedom (timetables, fares, image, additional services inside and outside the trains, etc) during the contract period.

These various forms are ordered in Figure 5.3 into four main options for the place of the tactical (T) decisions.

	T determined during contracting/tendering	T determined prior to contracting/tendering
T changes during contract	Contracting/tendering of: - the <b>development</b> and - the <b>realisation</b> - with <b>redevelopment incentives</b>	Contracting/tendering of: - the <b>realisation</b> - with <b>redevelopment incentives</b>
T fixed during contract	Contracting/tendering of: - the <b>development</b> and - the <b>realisation</b>	Contracting/tendering of: - the <b>realisation</b>

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Figure 5.3: Tactics and contracting

If the contracting party decides to give some service design powers to the operators, then a first consideration may lead him to the conclusion that the tactics should not be determined *by* the tendering/negotiation process, i.e. *before* the contract, because of the informational advantage of the incumbent operator in terms of market knowledge. Solving this information asymmetry may be feasible, but is costly. Yet, even without solution to this problem, interesting suggestions could appear at this stage. A second consideration may then lead to the conclusion that the tactics should at least be revisable *during* the contract. Markets evolve in time and operators – especially new entrants – can only acquire market knowledge by actually operating in the markets considered. Competitive bidding for the tactics would result in a static network based upon an imperfect perception of demand by the (entrant) operators, which would clearly not be adequate. The

<sup>14</sup> See the ISOTOPE research for a further description of some examples.



balance that has to be struck here is that between more freedom for the agent (aims-contracts<sup>15</sup>) and more guarantee for the principal (means-contracts<sup>16</sup>).

## 5.5 Quality<sup>17</sup>

Various forms of customer charters and of quality contracts have been developed during recent years. They aim at transforming passengers' expectations and demands on public transport into economic incentives for the operators. The development and implementation of different quality incentives in UPT are closely linked to the quality cycle:

- ◆ *Expected quality*: The level of quality wished for by the passenger can be defined as the sum of a number of weighted quality criteria. Qualitative and quantitative surveys, can be used to identify these criteria and their relative importance. Implicit evaluations can also be determined from such studies.
- ◆ *Planned quality*: The planned service can be defined in terms of the results to be attained for the customer. It is made up of a reference service, a level of achievement for the reference service and a threshold of unacceptable performance. This is defined in different kind of quality contracts and customer charters.
- ◆ *Realised quality*: The quality realised is evaluated through quality indicators which are based on the passenger viewpoint. The measurements are established using statistical and observation matrices. In this respect, it must be understood that realised quality is evaluated from the passenger viewpoint, and is not simply a technical evaluation to show that a process has been accomplished.
- ◆ *Perceived quality*: How a passenger perceives the reality of the situation depends on his personal experience of the service, or associated services; all the information he receives about the service, not only that provided by the company, but also information coming from other sources, his personal environment, etc.

*The Quality Loop has been extensively used in Quattro.* TOI report 740/2004

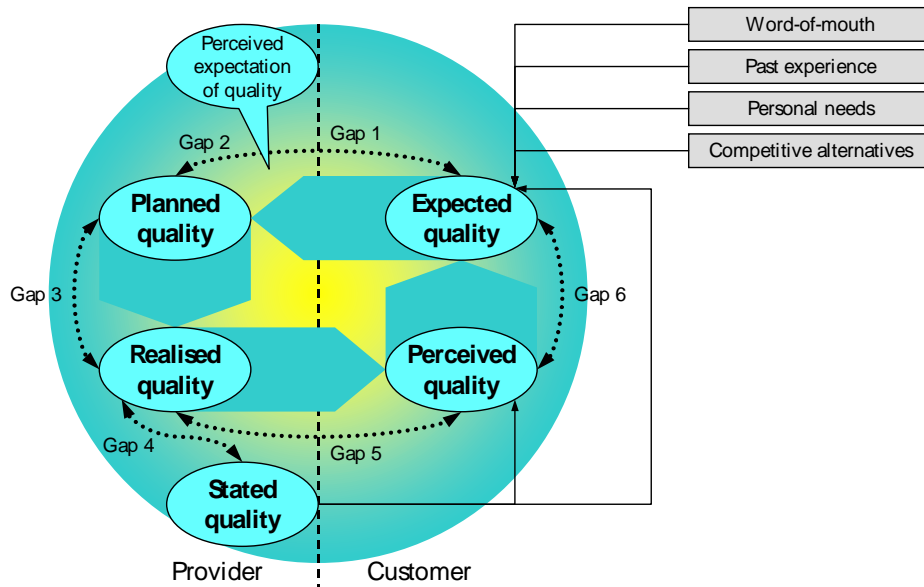
Figure 5.45.4 is one interpretation of it (source: adapted on the basis of various references).

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<sup>15</sup> We define *aims-contracts* as those where the principal sets a number of aims or targets which are to be fulfilled by the selected agent using whatever means within some broad limits set by the principal.

<sup>16</sup> We define *means-contracts* as those where the principal dictates to the selected agent the means to be used with possibly some freedom of choice and with or without clear statement of the aims.

<sup>17</sup> Many of the following elements are results of the QUATTRO research for the EC.



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Figure 5.4: *Quality loop*

The figure illustrates that several gaps exist, and each of which deserves an separate measurement:

- ◆ Gap 1: Gap between the customers' expectation and the operator's perception of customers' expectation
- ◆ Gap 2: Gap between the operator's perception of customers' expectation and the quality specifications
- ◆ Gap 3: Gap between the quality specifications and the service delivered (actual performance)
- ◆ Gap 4: Gap between the service delivered and the external communication on the services (stated quality)
- ◆ Gap 5: Gap between the service delivered and the perception of those services by the customers
- ◆ Gap 6: Gap between the expected service quality and the perceived service quality

Here too, it is important to realise the analysis of contracts on their 'quality' aspects can be distinguished according the three levels defined earlier. At the strategic level the following question could be asked: What influences travel customs, and how has the share of public transport developed? At the tactical level: What is the satisfaction of customers with various aspects of the public transport system? At the operational level: How does the passengers experience the particular journey on a given route? In other words: there is a need to structure and classify the quality tools and quality improvement processes at the strategic, tactical and operational levels.

Besides, attention should be paid to the balance between quality measurement indicators, monetary incentives in the contracts and quality management instruments for those submitted to the contract. as this will influence the long term dynamic in the contract. Furthermore the difference between 'customer charters'

(contract with the customer) and ‘quality contracts’ (contracts ‘on behalf of’ the customer) should be borne in mind.

## 5.6 Financial aspects<sup>18</sup>

Pricing and financing in Urban Transport are closely related concepts since the level of prices determines the self-financing capacity, and consequently the need for subsidies. In this perspective financing urban transport systems includes all economic instruments that can lead to:

- ◆ more efficiency, that is any means to improve incentives to economic efficiency and internalise external effects of transport;
- ◆ raising additional funds (capital) to support the costs of the various elements of urban transport systems.

The following categories of financing can be distinguished:

- ◆ Transport users contributions
- ◆ Contributions from public sources and public companies
- ◆ Contributions from other beneficiaries
- ◆ Private sources

*Transport users contributions:*

- ◆ Within this category Public Transport Fares are the most common source of financing across Europe, although in most cities they cover only a minor part of the operating costs. With the exception of the deregulated regimes, fares levels and structure are settled within limits established by the authorities. Due to the public service characteristics of Urban Transport the use of concessionary fares (compensations for fare rebates, paid through the operators or through the passenger) is a common practice in Europe in all regulatory regimes.

*Contributions from public sources and public companies:*

- ◆ Public sources, either from the general budget or earmarked – generally seen as an inefficient financing instruments – are the main source for investment and deficit coverage in Urban Public Transport. They contribute to the stability of the service but are also seen as a major contributor to the productive inefficiency of the less competitive operators.
- ◆ Cross-subsidisation by public companies also falls within this category. Cross subsidy is a major problem in terms of distortion of competition as it gives a clear advantage to public companies, mainly municipal companies with other activities (e.g. electricity, gas, interurban transport). The potential to distort competition is particularly high in regulated regimes where municipal companies detain a significant part of the market share.

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<sup>18</sup> This section is almost entirely based on the results of the FISCUS research for the EC. Some slight changes have been included in order to fit to this framework.

*Contributions from other beneficiaries:* One can distinguish between two types of internalisation of the ‘externalities’ created by the existence of the transport services:

- ◆ Earmarked taxes for transport purposes which are collected either directly or indirectly from the employers, and aim to assure the mobility of their employees. Examples are the “versement de transport” used in France, and the similar taxes used in Vienna and in Brasil. The main drawback of the method relates with the increase in labour costs, and in turn has the merit of raising an additional source of financing, while keeping some competitive pressure on the operator for the improvement of the quality of the service, as the choice of mode and company are still left to the end-user.
- ◆ Value capture, which entails a low risk of distortion of competition, presents the following advantages:
  - ◆ Value capture through operators revenue: Internalises the external benefits produced by transport facilities and reduces the need for subsidies. Additionally, some of the diversified services can be a stimulus to increase patronage (e.g. commercial areas, vertical integration of services, etc)
  - ◆ Value capture through taxes: Besides internalising the external benefits of transport facilities, some taxes (e.g. land owners) stimulate the systemic approach to urban planning, with a significant impact in the scope of action of the authorities responsible for the mobility system.

*Private sources:* Within the private sources of financing, private loans, public private partnerships are the most relevant ones:

- ◆ Private loans are a traditional form of financing. They are mostly used to solve cash-flow problems, and its main advantage is enabling the division of costs between more than one user generation.
- ◆ Public Private Partnership (PPP’s) are contracts between the public and the private sector, normally used to provide urban mobility solutions. The main advantages of these arrangements, when correctly implemented, are:
  - ◆ Improvement of efficiency;
  - ◆ Relief of the pressure on public budget;
  - ◆ Sharing of risk and responsibilities with private partners;
  - ◆ Stimulation of entrepreneurial innovation;
  - ◆ Benefits of private management methods.

Figure 5.55.5 produced by the FISCUS research give a clear idea of the implications of each financing alternative. Please note that this figure also includes the car system. Behind the complexity of this figure, the triangular relationship described earlier can be distinguished, with the difference that the authority and the tax payers have been amalgamated in this figure.

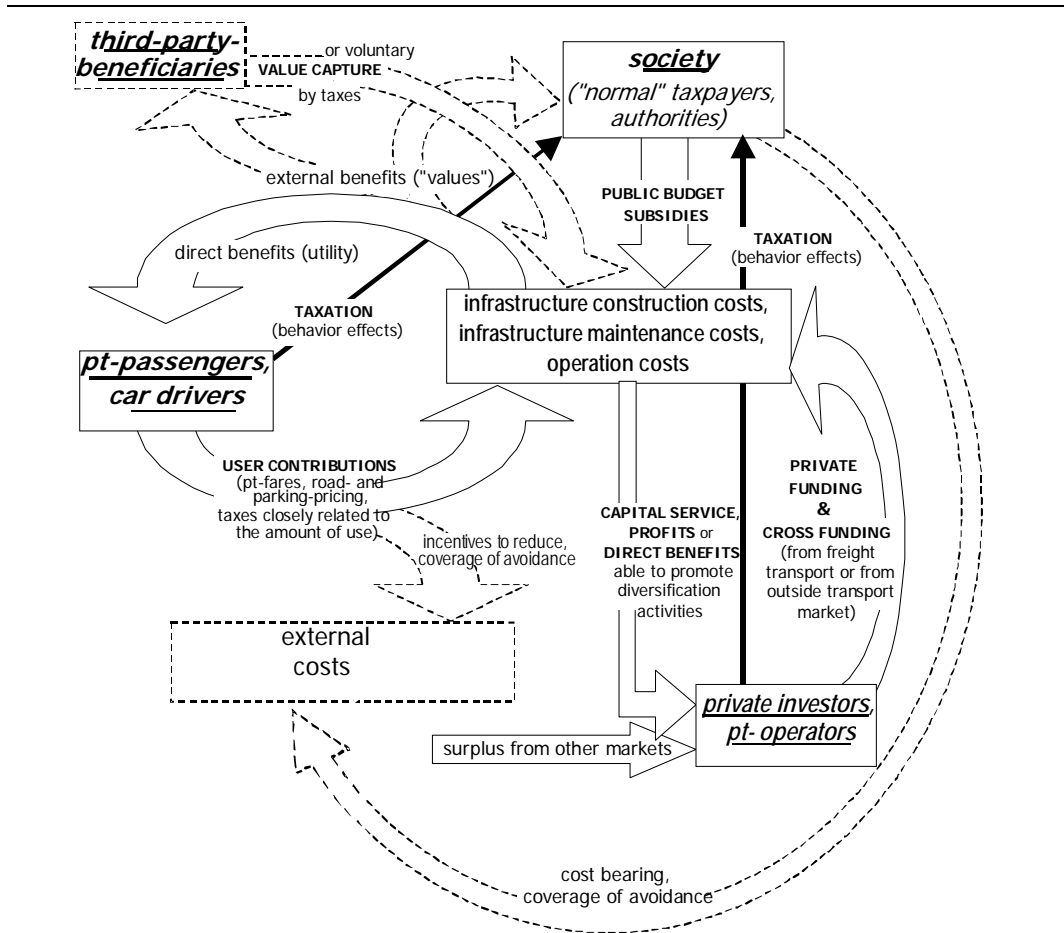


Figure 5.5: Financing alternatives in Urban Transport (conceptual) (Source: FISCUS Handbook)

In order to adequately describe real-world examples, it is important to distinguish between the following:

- ◆ “payments” (fares, subsidies, contract price etc) versus “financing” in the proper sense (such as in PPP, loans etc)
- ◆ “investments” versus “operational costs”
- ◆ sources of money for the authorities versus sources of money for the operators

## 6 Checklist

The collection of information on the three previous chapters over several transport sectors and countries requires a great deal of precision in information gathering. The following checklist will help to cover most/all relevant aspects.

### Stated objectives

The next element is the description of the stated objectives for the introduction of competition, and the triggers that lead to this change.

Pay due attention to the following three levels:

- ◆ Samfunnseffektiv
- ◆ Markedseffektiv
- ◆ Produksjonseffektiv

Element	Explanation
Main elements that triggered the reform and stated objectives for the reform	<p>Please find out which where the triggers for the reform. Possible examples are:</p> <ul style="list-style-type: none"> <li>◆ political or dogmatic considerations such as a privatisation trend</li> <li>◆ 'PT as competitor to the car' (environmental or modal share considerations)</li> <li>◆ budgetary considerations such as growing deficits and Euro-criteria</li> <li>◆ international considerations such as the expectation of competition requirements from the EC</li> <li>◆ internal considerations such as a general devolution/decentralisation/federalisation of power from the national level to local governments</li> </ul>
Initiators of the reform	<p>List the actors/stakeholders who can be seen as the initiators and/or driving forces for the change or resistance to the change. Possible examples are:</p> <ul style="list-style-type: none"> <li>◆ potential private entrants may have requested the government to facilitate private entry</li> <li>◆ the national government perceived the pending European regulations/directives as an urgent reason for change</li> <li>◆ regional governments to which public transport responsibilities were to be delegated requested the possibility to use competitive tendering to improve efficiency</li> <li>◆ municipally-owned companies resisted to the changes by deploying various lobby activities</li> <li>◆ trade-unions threatened with national strikes if discussions were to be continued</li> </ul>

### Institutional changes

Describe in this section the main elements of the reform, categorised from legal changes, to regulatory changes, organisational changes, financial changes and

contractual changes (see institutional part above), that were needed to introduce competition. Pay due attention to the differences between these levels of change.

Be careful to distinguish between the reform elements and the accompanying instruments that were introduced to facilitate a smooth transition.

Element	Main reform element and path	Instruments facilitating the changes
Legal changes	<p>Examples:</p> <ul style="list-style-type: none"> <li>◆ new passenger transport law</li> <li>◆ amendments to the existing passenger transport law</li> </ul>	<p>Examples:</p> <ul style="list-style-type: none"> <li>◆ introduction of an evaluation moment in the law ('way back')</li> </ul>
Regulatory changes	<p>Regulations are defined here as rules set by some authority, upon powers granted to her by a law. Examples of changes in regulation are (please check the exact legal status in your country!):</p> <ul style="list-style-type: none"> <li>◆ relaxing entry regulations into the industry</li> <li>◆ relaxing authorisation requirements limiting parallel services</li> </ul>	<p>Examples:</p> <ul style="list-style-type: none"> <li>◆ introduction of more flexibility (choice of regulatory setting) for local authorities</li> </ul>
Organisational changes (system level)	<p>The laws and regulations may allow for various possibilities in terms of local organisation of public transport. Describe which choices have been made within the scope allowed by laws and regulations.</p> <p>Examples are:</p> <ul style="list-style-type: none"> <li>◆ creation of a regional co-operation between local authorities</li> <li>◆ creation of a publicly-owned planning agency organised according to private law</li> </ul>	<p>Examples of instruments that may have been used to facilitate the transition at the organisational level:</p> <ul style="list-style-type: none"> <li>◆ transfer of civil servants from national to regional authorities (in the regionalisation case where all expertise used to be located at the national level)</li> <li>◆ divisional split-up of the former public company in order to create a regional planning agency, separated from operational divisions</li> <li>◆ putting authority-owned companies at arm's length</li> <li>◆ privatisation of companies</li> <li>◆ financial compensations for companies opting-out</li> </ul>
Changes in subsidising and financing regimes	<p>Examples:</p> <ul style="list-style-type: none"> <li>◆ decentralisation of public transport funding to regional transport authorities</li> </ul>	<p>Examples of instruments:</p> <ul style="list-style-type: none"> <li>◆ creation of a regional transport tax</li> <li>◆ introduction of more flexibility for multi-year budget allocation for local authorities</li> <li>◆ creation of new investment budgets in public transport systems</li> </ul>
Relational / Contractual changes	<p>Examples:</p> <ul style="list-style-type: none"> <li>◆ putting municipal operator at arm's length</li> <li>◆ introduction of a performance contract between authority and operator</li> <li>◆ introduction of a performance contract between transport authority and transport planner</li> <li>◆ introduction of net-cost contracts between authority (or planner) and operators</li> <li>◆ transfer of planning functions (tactical level) from authority to operator</li> </ul>	<p>Examples of instruments:</p> <ul style="list-style-type: none"> <li>◆ trial areas with experimental contracts</li> <li>◆ creation of a stimulation budget for trials with new contracting or tendering methods</li> <li>◆ temporary protection of personnel by transfer into separate accounting</li> <li>◆ stimulation of the appearance of 'customer charters'</li> </ul>



Element	Main reform element and path	Instruments facilitating the changes
Organisational changes (actor level)	Examples: ♦ internal reform of operator by creation of new divisions ♦ initiation of cultural change ♦ improvement of management information (activity costing,...)	Examples of instrument: ♦ development of benchmarking with other operators ♦ educational programme for staff ♦ ...
Other changes		Examples of instruments: ♦ organisation of courses, development of handbooks, creation of expertise centres,...

### Information tables 'before' and 'after'

The following table covers in more detail the functioning of the regimes studied. Depending on the case studied, it may be needed to fill in the checklist twice: once for the current situation (with competition), and once for the previous situation (no competition). This should only be done when this delivers useful additional information for the project [to be discussed].

The following tables also make a distinction between the 'official' situation and the practice. This may be more or less relevant, all depending on the cases studied.

What has to be covered is dynamics of the functioning of the new competitive regime, at all levels presented in the following table. Relevant items are, e.g.:

- ♦ What is the dynamics of the contracts? How do incentives develop? E.g. when new contracts are made, is there a tendency to use new forms of incentives, or to abolish some forms that did not work? (why did it not work?)
- ♦ What is the balance between contractual incentives and freedom of the operator? How does this evolve with the functioning of the new competitive regime? Is the contractual freedom actually used by the operator? What does really happen?

The four levels of institutions presented above may be useful to classify information within the following points.

Elements	In the laws and regulations	In practice + dynamics
Right of initiative	<p>Explain who, according to the <i>legal framework</i>, has the right to create public transport services. Examples could be:</p> <ul style="list-style-type: none"> <li>◆ only the authority can create services, and she is free to produce the services herself, or delegate it to other actors</li> <li>◆ only the authority can create services, but the authority is not allowed to be both orderer and producer of services</li> <li>◆ the regime is based upon authority initiative, but private operators can be allowed to enter on the market by their own initiative upon an exceptional procedure</li> <li>◆ private operators have the right of initiative, but this is submitted to (strict) regulation</li> <li>◆ private operators have all freedom of entry</li> </ul>	<p>In reality, the regime may function in a different way from what is determined by law. Explain here the discrepancies between law and practice. Examples:</p> <ul style="list-style-type: none"> <li>◆ the regime is legally based upon market initiative, but private operators do not exist (or only marginally) as most operations is provided by authority-owned companies</li> <li>◆ authority initiative with delegation is the principle (concessioning), but there has been no concessioning for several decades as existing concessions have been prolonged</li> <li>◆ authority production is the principle, but in practice all operations has been subcontracted to the private sector</li> </ul>
Selection of operators	<p>Present here how operators are to be selected according to the law. Especially, pay attention to the role played by direct and/or indirect competition.</p> <p>Examples:</p> <ul style="list-style-type: none"> <li>◆ In market initiative with free entry, direct competition (or contestability) is assumed to discipline the action of operators. The direct market process will lead to entry and exit. The authority does not select operators on those markets.</li> <li>◆ In authority initiative, competitive tendering procedures may have to be followed to select the best bidder to a call-for-tender organised by the transport authority.</li> </ul>	<p>Present here the difference that may exist between the legal principles and the reality.</p> <p>Examples:</p> <ul style="list-style-type: none"> <li>◆ In market initiative regimes: the disciplining market forces may not work perfectly as predatory behaviour has developed.</li> <li>◆ In authority initiative regimes with tendering: the neutrality of the selection is limited by lobbying and by the limited number of competitors.</li> <li>◆ In market initiative regimes: even if autonomous market entry is legally possible, no entry has taken place in practice. This is due to additional regulations restricting severely the possibilities for entry, and to a custom or general perception that has grown that private entry is not feasible nor desirable.</li> </ul>

Elements	In the laws and regulations	In practice + dynamics
<p><b>Role of authorities in terms of control on operators</b></p>	<p>Present here the general decentralisation framework between national, regional and local authorities as far as the control on operators is concerned (issues are: market entry, monitoring, safety,...)</p> <p>Examples (describe also each type of authority or body):</p> <ul style="list-style-type: none"> <li>◆ national authorities are responsible for rail, regional authorities are responsible for regional and suburban transport, urban authorities are responsible for urban transport.</li> <li>◆ urban and regional authorities can create co-operative bodies for the control of public transport.</li> </ul> <p>Please describe clearly the nature of each authority or body involved.</p> <p>Describe the freedom of organisational design that existed for the case you describe.</p>	<p>Present here the situation as it existed in the case you are analysing as the law may leave a room for choice for the exact implementation at the local level.</p> <p>An example may be the (potential) usage of a 'threat' of competition: authorities may sometimes use this means to force actions that they could not otherwise impose in the current regime. How does this work?</p> <p>Pay due attention to the legal status of the bodies presented (division of administration, company in the public sector, private company status,...)</p> <p>Mention whether all aspects were conform to the laws or whether specific local situation had developed and became to be tolerated.</p> <p>Informal contacts may be determinant</p>
<p><b>Role of authorities in terms of control on infrastructures</b></p>	<p>Present here the general decentralisation framework between national, regional and local authorities as far as the control on infrastructures is concerned (issues are: initiative, planning, ownership, realisation, maintenance, monitoring, safety,...)</p> <p>Please describe clearly the nature of each authority or body involved.</p> <p>Describe the freedom of organisational design that existed for the case you describe.</p>	<p>Present here the situation as it existed in the case you are analysing as the law may leave a room for choice for the exact implementation at the local level.</p> <p>Pay due attention to the legal status of the bodies presented (division of administration, company in the public sector, private company status,...)</p> <p>Mention whether all aspects were conform to the laws or whether specific local situation had developed and became to be tolerated.</p> <p>Informal contacts may be determinant</p>

Elements	In the laws and regulations	In practice + dynamics
<p><b>Role of authorities in terms of subsidisation and financing</b></p>	<p>Present here the general decentralisation framework between national, regional and local authorities as far as subsidisation and financing are concerned.</p> <p>Issues are: infrastructure investments subsidies, vehicle investment subsidies, operations subsidy, company financing, revenue compensations,...</p> <p>Characterise the subsidisation regime as clearly as possible, e.g. to identify the level of freedom that a specific authority has in spending subsidies on the transport sector considered.</p> <p>Explain how the subsidisation rules are fixed (legal basis, concertation basis, etc.)</p> <p>Examples:</p> <ul style="list-style-type: none"> <li>◆ national government subsidises x% of fixed infrastructure, regional government subsidises y% of rail vehicles investments, local government (and/or co-operating body) subsidies operational deficit</li> <li>◆ local governments cover their subsidy expenses by local taxes, <i>or</i>, local governments cover their subsidy expenses by transfers from the national government that can not be used for other purposes than public transport,...</li> </ul>	<p>The laws can leave some freedom of choice as far as local implementation of national rules are concerned and there can be a difference between the legal situation and practice in terms of funding.</p> <p>Examples:</p> <ul style="list-style-type: none"> <li>◆ the deficit of municipal companies is covered by their owners, on top and above any subsidy received in the context of specific investments, revenue compensation or contractual operations.</li> <li>◆ publicly-owned companies have no R.o.I. obligations and benefit from a state guarantee for any loan on the capital market.</li> </ul>

Elements	In the laws and regulations	In practice + dynamics
<p><b>Strategic - Tactical - Operational decision-making</b></p>	<p>Present here which limitations the <i>legal framework</i> imposes to the allocation of strategic, tactical and operational decisions (see D1 for all relevant elements) to actors.</p> <p>Example:</p> <ul style="list-style-type: none"> <li>◆ the law could state that the decision on fares have to be taken by the authority (making fare freedom for operators impossible)</li> <li>◆ the law could state that the frequencies have to be set by the authority before any contracting</li> </ul>	<p>Present here how the strategic, tactical and operational decisions have been allocated in practice in your case between the actors involved.</p> <p>Present each element of the strategic - tactical - operational chain, describing which actor has the power to: (1) limit, (2) suggest, (3) discuss and (4) decide. Please note the differences! Example:</p> <ul style="list-style-type: none"> <li>◆ An authority may have to set a minimum accessibility level according to the law (i.e. (1) limit)</li> <li>◆ the potential operators in the context of tendering may have the possibility to suggest routes and frequencies (i.e. (2) suggest)</li> <li>◆ passengers associations and regional authorities may have the right to be heard (i.e. (3) discuss)</li> <li>◆ and the transport authority has the right to make the final decision between all operator's proposals (i.e. (4) decide). Alternatively, this decision may be given to the operator within the limits set by the authority.</li> </ul> <p>Each element of the chain can be partially co-decided by several actors. Example on the decisions on fare (i.e. tactical level):</p> <ul style="list-style-type: none"> <li>◆ the political authority may decide on the general yearly level of fare increase</li> <li>◆ the tendering body decides on the general fare structure for the length of the contract and on the minimum requirements concerning the existence of some types of rebate tickets</li> <li>◆ the operator decides on the exact fares and on the supply of further types of tickets besides those specified in the contract</li> </ul>

Elements	In the laws and regulations	In practice + dynamics
<p><b>Coordination / Integration</b></p>	<p>Present the framework responsible for the coordination of decisions and actions between transport sectors, between transport authorities and between transport operators, when such framework exists.</p> <p>Examples:</p> <ul style="list-style-type: none"> <li>◆ a law or regulation may impose a yearly coordination of timetables according to a specific conciliation procedure</li> <li>◆ A specific regulator may be created to coordinate conflicting situation on scarce infrastructures</li> <li>◆ A regulation or a contract may impose ticketing and/or fare integration between transport operators.</li> </ul> <p>It is important to state the links with other transport sectors, and the multimodal competitive implications it may have.</p>	<p>Some coordinative action may have appeared autonomously, besides the official regulations.</p> <p>Another relevant point is the level of congruence or divergence between the actions of the various authorities charged with the regulation or control of different transport sectors (bus transport versus rail transport, e.g.). Evolutions in these are relevant too.</p>
<p><b>Contractual relations and monitoring</b></p>	<p>Present here which limitations the <i>legal framework</i> imposes to the contractual and monitoring relations between the actors involved in the strategic, tactical and operational decisions discussed above.</p> <p>Examples:</p> <ul style="list-style-type: none"> <li>◆ a law or regulation may impose the usage of a contract and may impose a minimum number of topics to be covered by that contract</li> <li>◆ the law may limit the types of contract that can be used (e.g., gross-cost or net-cost contracts)</li> </ul>	<p>Present here how the contractual and monitoring relations were set up in the case that you are analysing.</p> <p>Please note that there can be several levels of contracting, e.g., between (1) a regional transport authority and a regional planning/tendering agency, and between (2) a regional planning agency and several operators. Describe clearly all contracts with all actors.</p> <p>Describe clearly all contractual incentives.</p> <p>Pay due attention to the allocation of risks in terms of production costs (excl. investments), investments in infrastructure, investments in vehicles, revenues,...</p>

## STO and AOC graphs

For these period, it would be very useful to draw STO (Strategic-Tactical-Operational) graphs and AOC (Authority-Operator-Consumer) graphs, such as to facilitate reading and facilitate comparisons between cases, sectors and countries.

# 7 Harmonisation of concepts (glossary)

## 7.1 Efficiency

**Allocative efficiency:** Relates to the production of products or services that best meet the preferences of consumers, expressed in their willingness to pay the accompanying (cost efficient) prices.

**Cost efficiency:** Relates to the production of products and services (of a specified quality) at minimum possible costs.

**Economic efficiency:** Relates to the combination of allocative and cost efficiency.

**Effectiveness:** Achieving the stated objectives. Action having an effect on producing a definite or desired result in economical terms.

## 7.2 Deregulate, liberalise, privatise

**Liberalise:** to make autonomous entry to the market easier

**Deregulate:** to reduce authority rules on the actions of market suppliers

**Privatise:** sell (to individuals, stock exchange,...) former state (municipal,...) assets, such as companies

## 7.3 Market failure, competition, contestability

**Market competition:** Competition between multitude of companies in an open market, that struggle among them in order to get their products and services' sold, setting the prices that their costs and market enable.

**Market failure:** Situation where the market produces inefficient results due to the existence of any of the following factors:

- ◆ imperfect competition,
- ◆ natural monopoly,
- ◆ public goods,
- ◆ externalities,
- ◆ common ownership of goods,
- ◆ lack of perfect and symmetric information,
- ◆ incomplete markets.

**Market contestability:** Characteristic of certain markets in which incumbent companies are threatened by potential entrants, causing efficient results without the existence of perfect competition conditions. Baumol et al. (1982) hold that contestable markets guarantee the social benefits of perfect markets without the need of making strong assumptions about the number of companies that must be operating in the market. Shepherd (1984) has observed that these results are only valid under the following assumptions:

- ◆ Entry to the market is free and without limits.
- ◆ Entry is absolute.
- ◆ Entry is perfectly reversible.

## 7.4 Authorities

**Authority:** government or (its) administration.<sup>19</sup>

Organising transport authorities are authorities which have powers, and may be the duty, to organise (i.e. create) passenger transport services in their jurisdiction. Transport companies in such a framework act on behalf of the transport authority.

Regulatory transport authorities are authorities that have some powers to regulate the actions of transport companies on the passenger transport markets. The powers of such authorities can vary considerably according to the legal framework of the country considered: from very weak regulators of the free market, to very powerful regulators with powers close to those of organising authorities. Transport companies in such a framework are considered to be independent companies (be they private or public) acting upon their own initiative on a market.

Transport planning agencies are specific (semi-)independent institutions created by 'the authority' (mostly the transport authority) to administer in a professional way a number of tasks related to the planning of transport services in the region of competence of the authority. This may include the contractualisation (possibly through competitive tendering) of transport operators. The planning functions are carried out by transport operators or directly by the transport authority when such an agency has not been created.

## 7.5 Licence, authorisation and concession

**Licence:** right to enter the occupation of passenger transport operator ('operator'). A licence is granted on the basis of qualifications (concerning e.g. good repute, financial standing, professional competence) that attest the ability to be an operator. Hence, a licence concerns access to the profession.

**Authorisation:** an exclusive or non-exclusive right to operate specific services that a (licensed) 'operator' can apply for to a competent authority. In the case of an

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<sup>19</sup> Remark: when referring to 'the authority' we do, unless stated otherwise, refer to the whole government (at the relevant, national, regional or local level) including its support staff in the form of civil servants.



exclusive authorisation, other 'operators' are excluded from providing the same services under the same conditions. The authorisation procedure makes it possible to check whether the candidate operator fulfils all the necessary (objective and non-discriminatory) legal and administrative requirements.

**Concession:** A concession is an agreement between an authority and a (licensed) 'operator' of its choice whereby the authority transfers the execution of a service to the public, lying within its responsibility, to the 'operator' and the 'operator' agrees to provide the activity in return for the exclusive or non-exclusive right to operate the service or this right together with payment. A concession can take several legal forms; however, a concession is always a kind of agreement by the necessity of acceptance by the operator (although maybe very rudimentary). UK rail franchises are concessions (we prefer to limit to use of the term franchise to its usual meaning of 'commercial brand franchises' (e.g. McDonald's) to avoid confusions.

## 7.6 Quality

### General terms

**Total Quality Management:** Management approach that integrates all functions and processes within an organisation in order to achieve continuous improvement of the quality of goods and services (ISO 8402). This quality management approach entail all activities of the overall management function that determine the quality policy, objectives, responsibilities, and implement them by means such as quality planning, quality control, quality assurance and quality improvement (QUATTRO)

**Continuous improvement (on going improvement):** Need of continuous adjustment of the service design and processes of the provider organisation itself in order to maintain or increase its value enabling the identification of their strong and weak characteristics (QUATTRO)

**Benchmarking.** Systematic comparison of the performance of an organisation in relation with other departments/subsidiaries (internal benchmarking) or other organisations, competitors or industry leading companies (external benchmarking), as a method of sharing knowledge and experience of "best practices" to bring improvement.

### Quality loop

**Expected quality.** Level of quality that is requested by the customer and can be defined in terms of explicit and implicit terms.

**Planned quality.** Level of quality that the company aims to provide for its passengers on the basis of its perception of the expected quality, external constraints and financial conditions..

**Realised quality.** Level of quality that is achieved on a day-to-day basis in normal operating conditions.

**Perceived quality.** Level of quality perceived, more or less objectively, by passengers in the course of their journeys.

**Customer satisfaction.** Overall level of attainment of a customer's expectations, measurable as the percentage of the customer expectations which have actually been fulfilled.

### **Charters and partnerships**

**Partnership (travel partnership).** Agreement or series of agreements between Authorities, Contracting Bodies and Operators designed to encourage co-operation at a working level so as to improve the achievement of the business objectives of each party to the agreement but without any contractual liabilities.

**Quality partnership.** Non contractual agreement of co-operation between parties within the public and private sectors that have common interests in promoting public transport.

**Citizen's charter.** Document explaining which services can be expected by citizens and sets out the public service's commitments to them, whose views are taken into account when the charter is reviewed.

**Customer charter.** Document that details the commitment to the customers, sets out the standards to which the operators works, how it publishes its performance against those standards, how it looks after the customer and compensate them if things go wrong and how they can contact the operator. Customer charters can be classified into four categories:

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