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SWOT analyses of infrastructure networks' ownership and governance models

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Abstract		
<p>Municipalities in Finland are facing several challenges of which, curiously enough, many are self-made. These include issues such as increasing maintenance backlogs, limited asset management understanding, difficult to plan and levy fees and tariffs to match full cost recovery, problems in valuation of required maintenance and investment needs and costs, and focus on short-term management (resulting partially from the political cycles). Combined with restructuring and governance issues in the municipality infrastructures, the challenges can become even greater in the future. In various sectors of the municipal infrastructure networks (waterworks, roads, rail and ports) several ownership and governance models are utilized, and pose different types of challenges for the municipalities.</p> <p>This report highlights these issues by presenting the results of SWOT analyses, which represents the strengths, weaknesses, opportunities and threats of infrastructure networks' ownership and governance models from the point of view of the owner. The analyses are based on interviews of infrastructure network, municipal and state department executives. In addition two stakeholder workshops were arranged in spring 2010.</p> <p>In general the most important strengths of the infrastructure networks' ownership, governance and operation are related to the stable and secure ownership from the municipal involvement and good knowledge of day-to-day operations. Bureaucracy, lengthy decision-making and political interference are however tough to overcome weaknesses. Combined with a lack of transparency and accountability, sustainable development and maintenance of infrastructure networks, services are endangered. This can lead to deterioration of physical condition and diminished value of infrastructure. In addition, taxation differences; payment of interest without payments on the loan principal; and the maintenance backlog are the most disturbing findings in this study.</p> <p>Improved asset management and cost awareness are crucial issues in all the sectors. It is important to have the motivation and incentives to acquire cost knowledge and use of modern methods of asset management and pricing. In this challenging environment, good management would be a plus. In the future, changes in the concept, way of thinking, management, governance, and stewardship of the infrastructure networks are required.</p>		
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Preface

This research report is part of C-Business-project (Communities' technical networks – their governance, ownership and operation). It summarizes a number of observations from different case studies and ownership and governance models from various infrastructure sectors. Observations are summarized in a format of SWOT analyses (Strengths, Weaknesses, Opportunities and Threats analysis). SWOT analysis is a technique of mapping out the current state of affairs for an industry or sector, with the possibility of looking forward in terms of the potential for the sector. This is particularly useful when stagnation occurs and issues have stalled into a status quo, and where opportunities and threats suggest a potential way forward. In this case, the SWOT analyses are made from the owner/financier perspectives.

The C-Business-project is a joint effort between University of Oulu, VTT Technical Research Centre of Finland and Aalto University. The project group would like to thank Tekes – the Finnish Funding Agency for Technology and Innovation, City of Oulu, Finnish Transport Agency (former Finnish Road Administration), Ministry of Transport and Communications, Ministry of Finance, European Investment Bank (EIB), Destia Ltd., Helsinki City Transport, Association of Finnish Local and Regional Authorities and Pension Fennia for funding the project. The project group would also like to thank the management group for their valuable comments and input during the research.

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Executive Summary

Municipalities in Finland are facing several internal and external challenges. The most significant issues observed during this study are:

1. Taxation differences between different models of ownership and governance
2. The amount of backlog and repair debt in the technical networks
3. Very little scientific knowledge of asset conditions
4. The lack of accurate cost knowledge (unit prices or systematic costs)
5. Paying of interest only but not the principal of loans (for some waterworks cases)
6. Inability or lack of drive to change traditional practices
7. The strength of labor unions against market contestability
8. Poor planning in emergency and extreme weather situations

This report highlights these issues by presenting the results from the SWOT analysis, which represents the strengths, weaknesses, opportunities and threats of infrastructure networks' ownership and governance models from the point of view of the owner. In this study, ownership and governance variants are classified into five different models namely; the traditional model, the Municipal Owned Enterprise (MOE) model (and SOE for the state), the Municipal Owned Company (MOC) model (and SOC), the Client-Supplier model, and the Public-Private Partnership (PPP) model. Further details in the subsequent sections of this report will use this structure to identify the various technical networks and include more details of the sector-specific SWOTs.

The traditional model's most important strengths are related to the stable and secure ownership by municipality, large assets in operations and facilities, good knowledge of day-to-day operations, and understanding the local politics and residents' concerns. The weaknesses include bureaucracy, lengthy decision-making, political interference, an inability to compete with the private market (supplier MOE), negotiated contracts with in-house or a MOE supplier, limited flexibility to change the traditional systems that were established and a general lack of understanding of and limited asset management tools. In addition, there is a lack of transparency and accountability that may endanger sustainable development and maintenance of infrastructure networks and services. The municipalities have the opportunity to reduce costs by outsourcing, developing and improving the asset management tools and systems (however doubtful), and real partnering with industry and other public authorities. The main threats are the continuation of traditional practices (lack of innovation and growth), negotiated contracts to protect the in-house employees, continued backlogs, insufficient annual budgets, and short-sighted political decision making and an inability to change as society changes.

The Municipal Owned Enterprise (MOE) model offers business entrepreneurial practices into the public ownership structure. It is important to understand that the MOE can be applied to the client organization as well as the supplier organization. This model offers better management accountability, cost accountability, efficiency, and better practices in management and administration. The opportunities include focus on efficiency, a potential for borrowing financial capital, and customer service approach. Threats are the continuation as a MOE that is trapped in the process between competition and public service (of which some ports and roads are a good example), changes in taxation and changes in the legal structure. It should be highlighted that originally many believed that a MOE could be sustainable over a long period, but the EU petition against Destia Oy has foiled that approach and is now considered as an intermittent, although valuable phase to increase efficiency prior to being restructured as a MOC (this is not so significant in a monopoly situation).

The Municipal Owned Company (MOC) model is essentially the business entrepreneurial model that can compete in the private market (if not a monopoly). It is important to understand that the MOC can be applied to the client organization as well as the supplier organization. A supplier MOC infers practices similar to private companies that need to be self-sufficient from revenues. Borrowing from the financial market is more flexible, there is flexibility to purchase and sell companies, and to expand into other similar markets. The limitations are associated with sustainable revenues, paying corporate and VAT taxes, potential foreign competition, and political and social resistance.

In the client-supplier model all services are procured through open competition. This also implies that modern procurement practices, better customer services, development of asset management and tools need to be developed. There needs to be balancing of risks, transparent operations, a functional market of service providers, and quality standards and verification procedures for satisfactory quality outcomes. The inherent challenge is that all these take time to develop, require significant human resources, cooperation with the private market, and that a functional market continues to operate without significant market imperfections.

The PPP model has not been studied thoroughly, but it is essentially a cooperation of the public and private resources to provide services. Since this is extensively a unique model the results are not yet known; in a real sense is an unknown territory. The PPP model is intended to enhance the services and knowledge from the public and private sectors. The early comments are that it is supposed to bring efficiency and good management, but has limited scope. And unless there is real partnership and a possibility and willingness to renegotiate the contract, a PPP may not be a sustainable model, because no comprehensive contract can be complete as written originally. On the other hand, it is an increasingly popular model around the world to get value for money and benefits quickly to the users.

A summary of the sector SWOT results are highlighted briefly next and then discussed in more detail in the body of the report.

Waterworks

In the water sector political interference in financing, investments and pricing of services jeopardize necessary infrastructure investments, efficient operation and cost

recovery as required by law. To guarantee excellent service provision also in the future, systematic mapping of infrastructure conditions and proper investment allocation is needed. In addition, more transparent operation, clear cost accounting and freedom of strict political control bring opportunities for more efficient operation. Municipal owned enterprises (MOEs) and municipal owned companies (MOCs) models are steps in the right direction, but employers' of both models have still a lot to learn and exploit their respective advantages.

Roads/streets

Restructurings of the road and streets sector essentially began in the late 1980s and have now received a new boost from the fiscal crisis and minor advances are made toward the true client–supplier model to gain efficiencies and cost savings. Many smaller and medium sized municipalities have already restructured to the client-supplier model as they are more nimble and adaptable. The main road-block, and a demanding challenge, is to engage the decision-makers to approve changes in the stewardship and operations of the street networks and make their management function more business-like. The SWOTs show that the more advanced restructuring models have more flexibility, less political interference, better efficiency, and they are able to more easily adopt asset management practices as opposed to staying in the traditional positions, where progress stands still and backlogs increase.

Ports

Competition fairness issue will emerge after the renunciation of the Municipal Owned Enterprise (MOE) model. The Municipal Owned Company (MOC) model is probably going to be the most common model in the future. The number of ports should be determined by the market. However, for many municipalities the port and its economic impacts are significant and it is unlikely that a municipality would close its port even in the current economic downturn. For the competitiveness of a port the supporting basic infrastructure is the key to ensure that it will be able to compete with other ports and even alternative modes of transport.

Airports

The State Owned Company (SOC) model for the airports seems to be the correct ownership model. Even though Finavia is a monopoly in Finland, its competition comes from abroad. The business entrepreneurial concept complements the airport operations and allows greater freedom and effectiveness. The greatest challenges are being able to cope with market fluctuations, externalities, and providing a broad and good customer services to all travellers.

Rail

The railway infrastructure is government owned and financed. The passenger and freight services are organized as a company, VR, with several subsidiaries and cost centers. There is an EU mandated freedom to allow entry to the freight service market and international passenger service market in the EU, and no prohibition exists in Finland against entering the passenger services market in the future. As of now, in freight, VR is a monopoly in competition with trucking. The playing field is not level, however. At current prices, VR pays less than 20 percent of the rail infrastructure costs, excluding environment and accident costs while the trucking industry pays about 60 percent of the infrastructure costs, including the environment and accident costs.

The future ownership and governance of the technical networks greatly depends upon the decision makers and the economic situation. The SWOTs show that there is potential to incorporate business practices into the ownership model of MOEs and MOCs, but that varies from sector to sector. The ethos for public ownership of the technical networks is strong in Finland and the privatization concept has not yet greatly influenced them. Nonetheless, even within the public ownership of the infrastructure assets, many advantages in service delivery, customer service and economic efficiency can be obtained by adopting the kind of stewardship of the assets that is contestable in the market.

1 Introduction

Municipalities in Finland are facing several challenges that are external to them, yet curiously enough these challenges are self-made. Combined with restructuring and governance issues in the municipality infrastructures the challenges can become even greater in the future. In various sectors of the municipal infrastructure networks (waterworks, roads, rail and ports) several ownership and governance models are utilized, and pose different types of challenges for the municipalities. This is an interesting situation for those sectors that produce services with high security, reliability and public value, such as roads or waterworks, and electric generation and distribution. Most of these technical networks are monopolies or at least controlled by the public sector.

The first set of constraints is related to the economic and financial issues and their impact. Because of the economic downturn the municipalities' financial resources have become scarce, including declining tax revenues from residents due to unemployment, and a large number of retiring workers. The recent harsh winter and water pipe breakages have added to the difficult economic situation. Shortfalls in affordable financing have meant that several needed upgrades and investments have not taken place. Maintenance backlogs have increased. This situation is made more difficult by the changing legal environment and EU regulations.

The second set of constraints comes from the institutional arrangements. To a great extent the problems arise from a limited asset management understanding, leading to problems in valuation of required maintenance and investment needs and costs. That in turn makes it difficult to plan and levy fees and tariffs to match full cost recovery. There is also a lack of resources for research and development activities and a focus on short-term management, resulting partially from the political cycles. Even though the waterworks, energy companies and ports create revenues to the municipalities, the revenues are used with short-term focus on inter-sector financing, and not on long-term needs of the sector.

The third set of constraints is related to the environmental and demographic changes, which can change the demand patterns for the services. Similar pressures are also applying to service provision itself, such as an aging workforce and future infrastructure needs. There are also political pressures to keep the prices of services low, which does not help the management to run the operations like a business at a sufficient level of profitability.

1.1 Methodology

Semi-structured interviews were used as the main source of information. The objective was to capture the state of practice and to obtain a comprehensive picture of the infrastructure networks and their ownership and governance. Typical interviewees included infrastructure network, municipal and state department executives. The infrastructure networks included roads and streets, railways, waterworks, ports, airports, and to a limited extent local municipal energy producers. The interviews were arranged during 2009 and 2010. In addition, the SWOT analyses has benefited from two stakeholder workshops (in Oulu April 8, 2010 and in Espoo April 9, 2010), where municipality technical directors and experts provided valuable insight to the SWOT analyses.

1.2 Report structure

This report is organized as follows. The next section of the report presents a synthesis of the SWOT analysis for different types of ownership and governance models. This is an illustration of common features of the models and is sector independent. The following Chapter 3 presents a detailed sector by sector SWOT of the different models. The report ends with conclusions in Chapter 4 by presenting first a cross-cutting SWOT that captures the common issues for all the sectors reviewed and sums up the other major issues that came up during the study. All SWOT analyses are made from the (current) owner perspective to highlight the current situation from the public point of view. In some analyses, important aspects from the producers' and society's point of view are also highlighted.

2 Synthesis of SWOT analysis

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This section describes a synthesis SWOT that includes common issues applicable to all the technical networks. It seeks to identify the common aspects that all municipalities encounter, independent of the technical network. This is a bold and intensive task identifying most of the issues that exist in waterworks, roads and streets, railways, ports and to some extent, the energy and airport networks.

The SWOT in this Chapter describes the strengths, weaknesses, opportunities and threats based on the information from the networks studied. You will notice that the client-supplier model is missing as it is not applicable to all networks, but is included in the roads section in Chapter 3. Also, the MOE and MOC do not distinguish between a client and supplier MOE or MOC. The PPP was included to have at least one example of the model.

The content of this Chapter will include the following model discussion:

- Traditional model
- MOE model
- MOC model
- Private Cooperative model
- PPP model (roads only)

2.1 Traditional model

The traditional model refers to the Technical Organization (TO) that has its own workforce, called direct labor, which can perform most or all the required services. This model also includes the case in which the TO outsources services, but only as an optimization or when the requisite skills are lacking. The TO typically carries out, design, construction, maintenance, administration, and other needed services for the community. The SWOT for the traditional model is discussed and highlighted next (see Table 1).

Table 1. Synthesis SWOT of traditional model

S	Internal controls	W	Large overheads
	Strong municipal reserves/resources (incl. risk)		Lack of competition
O	Job security	T	High cost of workers
	Authority position		Political interference
	Large balance sheet → competitive advantage		Lack of innovation
	Strong doing business as usual knowledge		Inward looking (no drivers of change)
	Preferential tax treatment		
	Potential life-cycle costing and holistic approach		Underinvestment
	Resources to hire skilled staff		Public procurement rules might affect decision-making
	Reacting to customer feedback		Changes in tax code that remove or lessen preferential tax treatment
	Restructuring		

Strengths

Traditional models used by the municipalities have several strong features, which include internal controls, the backing of the municipality's resources and good knowledge of doing local business as usual. The TO typically has large assets like equipment, work yards (depots), publicly designed administrative and accounting systems, property, and usually a large work force. These features are especially important in smaller municipalities where a small number of employees can take care of several tasks from maintenance of parks to the operation of waterworks. In some municipalities there are very few jobs available, and a public organization was established with job security and with an advantage of a large balance sheet. From the municipality's point of view, strength is also that a public TO does not pay corporate taxes and even has a lower VAT compared to the private organizations and may have other preferential tax treatments. In a competitive market this may cause unwanted distortions.

Weaknesses

Weaknesses of the traditional model include large overheads, high cost of workers and the lack of competition. The large costs are an historical result from the large assets and from the many permanent workers for carrying out the services. A more important weakness, however, is the TO model's high vulnerability to political interventions and interferences in the operations, which ideally, in this model, should be managed by the technical director or a designated manager. There is also an inherent barrier to innovation since there are no drivers for change or a champion in the organization who desires to take upon significant risks that may lead to bad consequences.

Opportunities

Opportunities include improvements in quality and service based on regularly collected customer feedback, or endeavors to perform good public service. Since the TO has skilled workers and a historical knowledge of the local area there is a great potential to perform life cycle analysis and have a long-term holistic approach. TO's have not, however, taken advantage of this potential yet.

Threats

Probably the greatest threats are too low levels of investment, public procurement rules, and a bureaucracy that may slow down decision-making. A significant threat is tax legislation change that removes the preferential tax treatment.

2.2 Municipality owned enterprise (MOE)

The Municipality owned enterprise (MOE) model emerged in the 1990s when the privatization movement began to spread to the state and municipal ownership levels. The MOE model was intended to bring efficiency, cost accountability, and business entrepreneurial concepts into the public organizations. Another driver was to reduce the size of government and allow the potential for private sector involvement first in service delivery and later also in financing. The synthesis SWOT of the MOE is presented in Table 2.

Table 2. Synthesis SWOT of MOE model

S	Job security	W	Negotiated contracts
	Knowledge of working methods		Political interference
	Large balance sheet → competitive advantage		Bureaucracy and hierarchy
	Improved efficiency (compared to traditional)		Limited market and lack of competition
	Better administrative and financial responsibility (compared to traditional)		
	Partial independence (compared to traditional)		
	Preferential tax treatment		
O	More business-like orientation	T	Political barriers in decision making
	Customer orientation		Changes in tax code that remove or lessen preferential tax treatment
	Potential for innovation		
	Continuous improvement		

Strengths

The MOE has, for start, the advantage of owning a large asset pool consisting of equipment, depots, real estate located in prime areas, operational know-how, personnel, and public surety. Another significant strength of the MOE model includes currently favorable taxation position compared to the private sector. The efficiency of the MOE is significantly greater than that of the traditional model in terms of administration, productivity, cost knowledge and accountability, and independence, albeit partial, from the bureaucracy.

Weaknesses

Weaknesses include political interference, bureaucracy and hierarchy, which result from the municipal ownership. The MOEs have usually quite limited market because they cannot provide services outside their municipality without tax liability, which is why the preferential tax treatment is both strength and a threat. Negotiated contracts with the client and with other municipal departments are artificial as they have to employ the existing workers and not necessarily utilize private sector innovations and better practices. The private market is usually excluded or ignored.

Opportunities

The opportunities include moving toward the business model and focusing more on customer orientation. A significant potential exists from innovation and in operational improvements with continual improvements and fine tuning the practices.

Threats

The most significant threats include political interference, barriers in decision-making and changes in taxation, which have recently been discussed in the media.

2.3 Municipality owned company (MOC)

The Municipality owned company (MOC) model is considered the next progression phase for the MOEs. Many of the state owned enterprises have been restructured into State owned companies (SOCs) as a result of progression and the EU ruling. This decision has reflected on the MOEs which have been converted to a MOC when the MOE has potential for a good return on the investment, and is prepared and competent to compete against the domestic private market players or international competition. There may have also been other considerations favoring the change. Table 3 presents the SWOT analysis of the MOC model.

Table 3. Synthesis SWOT of MOC model

S	Business entrepreneurial approach	W	Full value added tax liability is a disadvantage compared to MOE
	More flexible decision making		
O	Independent finance / access to capital markets	T	The conflict between potential bankruptcy and ownership intervention
	Freedom to hire/fire employees & salary arrangements		Realization of business risks
	Even better administration, management and financial responsibility (compared to MOE)		Profit seeking nature (potential for cutting corners)
	Customer orientation		Privatization
	Easier to expand on markets		Political interference (corporate vs. public will)
	Diversification to other business areas		
	Freedom to sell, purchase and merge companies		
	Partnering		
	Potential for innovation (compared to MOE)		
	Opportunities for institutional investors (water&ports)		
More flexibility of pricing			
Possibility to take business risks			

Strengths

Most of the strong features of MOC’s derive from the business model and market-oriented approach. In essence it is the flexibility and freedom of decision making to pursue optimum management, administration, operational efficiency, and financial responsibility. This includes the staffing level and managing the organization like a business and not as a bureaucracy.

Weaknesses

The primary weakness of MOC is the need to pay full value added tax, corporate and other tax liabilities, which the MOE's and the traditional organizations do not have to do currently.

Opportunities

Opportunities include the freedom to operate in the markets, expand businesses when advantageous, purchase and sell companies or portions of the business activity, and customer market orientation. It is also possible to enter into partnerships, joint ventures and take reasonable risks provided they are approved by the board. There is potential for innovation and partnering with other private or public entities to optimize processes, operations and management.

Threats

The threats are similar to those of the private companies, which include unclear financial position, exposure to markets, unknown risks, exposure to bankruptcy or retreat to the traditional organization form, and the intercession of political will versus corporate decisions. There is also a great fear of privatization, which could lead to the sale to foreign entities that could potentially cause poor service delivery and quality problems. Threats also include the profit seeking nature, which can lead to cutting corners by compromising the service delivery.

2.4 Private Cooperative

The private cooperative model is a very interesting version of the private sector ownership model. Cooperatives have a long history in Finland and was common in the banking and agricultural sectors. Valio Oy in Finland started as a large private cooperative that specializes in dairy products and has been successful for a long time. In the technical networks the private cooperatives were observed in the water and road sectors. Table 4 presents the SWOT of private cooperative model.

Table 4. Synthesis SWOT of private cooperative model

S	Private ownership All owners equal / shared ownership No direct political control Majority voting for decision making Working bees	W	Small-scale operation Inefficient management (too many private owners) Little interest in expanding outside own territory
	O		Access to capital markets Merge operations & management (economies of scale and scope)

Strengths

The private cooperative model has several advantages, such as, independent private ownership, shared ownership in the sense that all owners are considered equal, a

majority voting for decision making and the absence of direct political control. Traditionally working bees have been used to take advantage of local teamwork that is free of charge.

Weaknesses

Small-scale and limited scope of operations can be a weakness because diseconomies of scale. There might also be a lack of skilled or motivated workers and managers, although the ownership base can be quite broad. Broad ownership base can lead to absence interest in efficient operation, which can cause indecisiveness between the owners and lead to backlogs.

Opportunities

Opportunities include gaining economies of scale and scope through mergers with other cooperatives or municipalities. Cooperatives have access to the capital markets, but that is rarely used. There is a potential for government subsidies for capital investments.

Threats

The difficulty or threats are ability to achieve higher or satisfactory quality of service, due to the limited financing and ownership decision-making process. Also, it may be difficult to achieve sustainable development and agreement among the owners.

2.5 Public-private partnership (PPP)

The Public-Private Partnership (PPP) model in this study is only utilized in Mikkeli for a streets/roads project in which there is a partnership between the client and a contractor. The Finnish Transport Agency has done two PPP projects with different versions of the PPP. The Mikkeli version includes cooperation between the contractor and the client, with a financial percentage agreement that depends of the outcome of the project(s). The intent was to engage in a cooperative effort in which both parties are winners. The SWOT for PPP (see Table 5) lacks substantial data and is inferred form Mikkeli and other known cases for want of information.

Table 5. SWOT of PPP model

S	<ul style="list-style-type: none"> Clear Understanding of Client Role Leaner Administration and Management Knowing the Yearly Cost for Maintenance Local Knowledge & Knowledge of Working Methodology Stepping Stone to Outsourcing 	W	<ul style="list-style-type: none"> Essentially No Savings Due to Retaining/Having Previous Own Work Force (Retaining Public Benefits) Incomplete Contracts (Lack of Documentation and No Sanctions) Quality Was Lacking or Not As Desired Uncertainty Regarding the New Approach Inefficient Organization Lack of Incentives & Disincentives Unique Model - Untested Not a Sustainable Model
	<ul style="list-style-type: none"> Opening the Market to Private Sector Focus on Efficiency & Effectiveness Focus on Customer Satisfaction Developing Good Asset Management Practices 		<ul style="list-style-type: none"> Market Position After End of Contract Contract Default
O			

Strengths

The advantage of the PPP model is the combined know-how and technical expertise of both public and private stakeholders. Therefore the strengths include a strong management capacity, efficient use of resources, and a partnering/cooperative approach.

Weaknesses

The weaknesses in the model include the inflexible nature of the PPP arrangement and the lack of exit strategy. The latter is a significant unknown how to terminate the contract.

Opportunities

Opportunities can include thinking more broadly, import new ideas, an ability to raise funding from external sources, and to innovate.

Threats

Threats include limited scope of work, usually built around a project and impacts of domestic and global economic cycles on the ability to generate funds.

3 Detailed SWOT analysis by sector

3.1 Waterworks

Maila Herrala

3.1.1 Waterworks in general in all ownership and governance models

The following table lists strengths, weaknesses, opportunities and threats of Finnish waterworks in general. These generic issues pertain to all waterworks regardless of their ownership and governance model (see table 6).

Table 6. SWOT of waterworks in general

<p>S</p> <ul style="list-style-type: none"> Excellent natural resources High quality services especially in more densely populated areas Knowledge of business as usual Municipal ownership → security (excl. cooperatives) 	<p>W</p> <ul style="list-style-type: none"> Aging infrastructure Not enough information about the current state/condition of the infrastructure Inadequate investments “Slow moving” municipal owner (excl. cooperatives) A great number of small waterworks Poor sewage treatment provision in sparsely populated areas
<p>O</p> <ul style="list-style-type: none"> Larger waterworks units Regional cooperation / collaboration Outsourcing and tendering Introduction of new (information) technologies Full cost recovery Systematic investment allocation Improvements in efficiency Education, training, recruitment and motivation of skilful staff Truly customer and stakeholder oriented service provision Transparency 	<p>T</p> <ul style="list-style-type: none"> Contamination of natural resources Crisis situations (pipeline break-ups, human errors...) Underinvestment → causing risks Aging workforce → loss of core competence Decrease in water sales (due to water saving)

Strengths

Excellent and plentiful natural resources are the bedrock of good quality water services in Finland. Strict environmental laws ensure relatively clean ground water and surface

waters, and thus high-quality services in the areas of ample water supply. Public ownership of waterworks is still considered an important strength in most municipalities since it provides citizens a feeling of security. The strength of hundreds of small private cooperatives and associations is that the customers are the owners, and good quality services are in everyone's interest. In general, water and sewage services are of high quality especially in more densely populated areas although some weaknesses and threats do exist.

Weaknesses

Although public ownership can be seen as strength, a slow moving municipal owner and its limited resources to renovate aging infrastructure is a weakness. More worrying than lack of financing is, however, the lack of information about the current condition of the infrastructure. Sometimes short sighted investment policy endangers the condition of both infrastructure and good service. A structural weakness of water sector is that Finland is sparsely populated and, especially in the north, population is in small villages far from each other. This has led to a large number of small water service providers and poor sewage treatment provision in the remote areas.

Opportunities

Systematic mapping of infrastructure conditions and proper investment allocation to reduce the maintenance backlog are the most important opportunities. New information technologies could help waterworks to map the assets and identify renovation needs. Waterworks should also identify opportunities for outsourcing, competitive tendering and regional cooperation so that economies of scale and scope, and more efficient service provision can be reached. The pursuit of efficiency and the importance of cooperation are evident in the current situation where tightening quality requirements and environmental constraints put a great number of small waterworks into a challenging position. Transparency of waterworks operation and full cost recovery could enable national benchmarking and financing of future investments.

Threats

Contamination of natural resources and diverse crisis situations are significant threats that waterworks need to address. Underinvestment, due to absence of up-to-date information on infrastructure condition and the lack of financing, pose serious threats to the waterworks services and, thus, the society at large. Aging workforce and loss of core competence is a threat in all infrastructure network operators. Waterworks need to make their business more attractive to attract young employees and make sure that the tacit knowledge is saved and transferred to future generations.

3.1.2 Traditional municipal waterworks

Table 7 presents the SWOT analysis of waterworks organized traditionally as an integral part of a municipality, as a municipal unit.

Table 7. SWOT of traditional waterworks

S	Municipal back-up & control	W	Sometimes un-professional management
	Stable financial structure (because in municipal budget)		Yearly budgetary limitations
	Cheap loans (because of good rating of municipalities)		Lack of innovation
	Job security		Problems in long-term planning
	Democracy		
	Preferential tax treatment		
	Support from other municipal departments		
O	Cost accounting	T	Lack of transparency
	Wider use of computer-based technologies and automation		Political control
	Benchmarking & learning from others		Bureaucratic decision making process
	Cooperation with other waterworks		Municipality's poor financial situation
			Changes in tax code that remove or lessen preferential tax treatment

Strengths

The most important strength of the traditional model is the back-up and control that the municipality provides to the waterworks. Stable financial structure, large balance sheet, cheaper loans and job security create stable and secure environment to operate. Traditional waterworks operate often as a part of municipality's technical services which enables flexible usage of labor. From the waterworks point of view the strength of the traditional model is that it can receive (hidden) subsidies from the municipality, which helps them to keep prices low and/or to make investments. Being part of the municipality exempts the waterworks also from taxes. From the society's point of view, the tax exemption and subsidies may however cause unwanted distortions. The traditional model's democratic decision-making process can also be seen as strength because citizens may feel that they can better influence what is happening in their surroundings. In addition, citizens consider public ownership extremely important because of high security and public value of the service.

Weaknesses

Municipalities' annual budget limitations are a clear weakness and the four year election period makes long term planning difficult. Traditional organizations often also lack innovation, since secure financial and operational position are not incentives for drive and motivation to change. Subsidies to and from waterworks make the operations non-transparent and lead to decision-making compromises. In some cases the manager has several other responsibilities (e.g. managing also the technical department of the municipality) which could lead to relatively unprofessional waterworks management.

Opportunities

More transparent operation together with clear cost accounting brings opportunities for more efficient operation. Different computer based technologies and automation, benchmarking and learning from one another might also provide improvements in service development.

Threats

Other issues that might come in the way of efficient waterworks operation are political control and bureaucratic decision making which can severely delay necessary

infrastructure re-investments. Lack of transparency is indeed a great threat if the traditional waterworks owner does not know what it owns and in what condition the assets are and what the revenues and costs are. Poor financial situation of the municipality is also a threat, which might affect the financing of the waterworks, increase subsidies from the waterworks to the municipality and end up in the corporatization (or even selling) the waterworks.

3.1.3 Waterworks as municipality owned enterprises

Table 8 Presents a SWOT analysis of waterworks organized as municipality owned enterprises (MOEs).

Table 8. SWOT of waterworks MOE

S	Municipal back-up Stable financial structure Job security Improved administrative and financial responsibility (compared to traditional) Preferential tax treatment Profit transfers from waterworks	W	Political interference Public procurement rules Multi-phased and inflexible decision making process <u>From the waterworks point of view:</u> Lack of independence (still close to the municipality) Inflexibility of pricing Profit transfers to the municipality
	O		More business-like operation Cost accounting Wider use of computer-based technologies, robots and automation Cooperation with other waterworks

Strengths

MOE has the same municipal back-up and job security as in the traditional model. It has improved administrative and financial responsibility since the operation needs to be separated from the municipality for accounting reasons. This gives the decision-makers more information about the assets, costs and revenues to make more informed decision. It can also be expected that the management of a MOE is more professional since the CEO does not have any other obligations towards the municipality. From the municipality's perspective MOE has also preferential tax treatment compared to municipality owned company and the municipality can also claim profit transfers from the waterworks.

Weaknesses

Weaknesses are usually a high level of political interference. In some cases public procurement rules hinder and slow down decision making. From the waterworks perspective a weakness is also that municipality may use it as a 'cash cow', which can endanger waterworks operations and planned investments. In addition, MOEs operate close to the municipality's leadership and may lack independence and flexibility in pricing.

Opportunities

The reason for changing traditional waterworks into MOE’s is usually the desire for more business like operation. The full potential of business thinking is not however always realized and there still are unexploited opportunities. Especially cost awareness, use of new technologies and innovative thinking can bring cost savings and efficiency gains. Cooperation with other waterworks should also be exploited.

Threats

A MOE is still a part of the municipal organization. Political control and bureaucracy can therefore be threats. It might also be difficult to recruit skilled staff because of the low level of municipal salaries. From the owners perspective threats also include the forthcoming EU ruling on state and municipality owned enterprises and changes in the tax treatment of MOEs. In some cases where waterworks are working in cooperation with other municipal departments (a modified client-supplier model) it might be that they are forced to order materials and services from these departments. These services can be more expensive than from private market, which is of course not an optimal way to operate.

3.1.4 Waterworks as municipality owned companies

Table 9 presents a SWOT analysis of waterworks organized as municipality owned companies (MOCs).

Table 9. SWOT of waterworks MOC

S	Business entrepreneurial approach	W	Weaker municipal back-up
	Business-like management style		Underinvestment
	More flexible decision making		Undervalued assets in balance sheet hinder investments
	Flexible salary and employee policies		Pricing contradictions due to natural monopoly limits full potential of MOC
	Independent finance		Unequal tax treatment compared to MOE
	Transparency		
	Easier long-term planning		
	Profit transfers from waterworks		
O	Customer and business orientation	T	Political control
	Innovation		Long-term planning is still problematic
	Development potential due to business-like operation		Conflict between owners’ will and company’s interest
	Easier to operate in other municipalities		Financing risks due to investments and loans
	Easier for several municipalities to have a single operator		
	Opportunities for institutional investors		
	Access to capital markets		

Strengths

The most important strength of MOC waterworks is business entrepreneurial approach, and business-like management style and decision-making. Salary and employee policies are more flexible than in the traditional and MOE models. Independence and flexibility add degrees of freedom to financing and possibility for longer-term planning of infrastructure investments. To some extent, MOC model also increases transparency. In

addition, municipalities have a legitimate right to demand profit transfers from waterworks, which is a definite strength from the owner’s perspective.

Weaknesses

Abovementioned strengths of MOC are not however always fully realized and some companies still lack of knowledge of the asset conditions and systematically under-invest in infrastructure leaving pipelines in poor, bad or unknown condition. Pricing from the natural monopoly position limits the full potential of MOC and require municipal oversight. MOCs are also in unequal position compared to the traditional and MOE models because they need to pay both value added and corporate taxes.

Opportunities

Business-like operation carries opportunities, which all MOCs have not yet realized. The MOC model enables innovation, especially if the employer encourages innovations through a reward system. This is different compared to the traditional model where money flow is guaranteed and everything works “satisfactorily” even without innovation. The MOCs can also sell their services to other municipalities. Also, this is the only model which provides real opportunities for institutional investors to invest in the water and sewage services.

Threats

The main threats are related to the conflicts between owner’s will and company’s interest. The Board of MOC often consists of municipal councilmen who might be short-sighted and who do not have technical competence. This might lead to problems in long-term planning and lead to some level of political control.

3.1.5 Waterworks as private cooperatives

Table 10 presents a SWOT analysis of waterworks organized as cooperatives.

Table 10. SWOT of waterworks cooperative

S	Owned by the users	W	Small-scale operation
	All owners equal		Absence of professional management
	Independent from municipal economy → no need to compensate for low taxes		Small capital may hinder borrowing
	All revenues can be used for development and investments		Small leverage of large owners (because only one vote)
	No direct political control		
	No possibilities for hostile takeovers		
	Simple organization and easy decision making		
	Working bees		
O	Cooperation / consolidation with other cooperatives	T	Higher water quality requirements are difficult for small units to achieve
	Service provision to neighboring municipalities		Lack of interest among owners towards sustainable development

Strengths

The strength of a cooperative is the independence from municipal economy and decision-making. This means that the cooperative model does not have to compensate for low taxes and all revenues can be used for investments and development of service. This is especially valid since cooperatives do not (necessarily) pay dividends for the owners. The owners are also the users of the service and therefore “good enough” quality—rather than too low or too high—of services is in everyone’s interest. Cooperatives are usually relatively small and have a simple organization and easy decision-making process, which is strength.

Weaknesses

However, small scale operation is also a weakness if owners are not interested in the development of the cooperative and if the management is not able to make rational decisions to improve operational efficiency. There may also be difficulties in obtaining loans. Municipalities and other larger customers (i.e. owners) might feel that they do not have enough ‘say-so’ in decisions relative to their size.

Opportunities

Opportunities of cooperatives are related to cooperation with other waterworks. In the future, small units may have difficulties in achieving tightened water quality and environmental requirements, which is why cooperation and possible consolidation with other cooperatives is a realistic option.

Threats

As already mentioned, one threat to cooperatives is the lack of interest among owners towards sustainable development of the services. However, if owners and managers are eager to develop the business, one opportunity is to consider business expansion to neighboring municipalities. Higher water quality requirements are not a threat in itself, but make it difficult for smaller units to reach the targets without substantial investments.

3.2 National Roads

Pekka Pakkala and Antti Talvitie

3.2.1 Client-Supplier Model

The Finnish Road Administration, now a part of the Finnish Transport Agency has progressed significantly in restructuring of ownership. The national roads represent almost 79000 kilometers of roads, which is the responsibility of the state and is the most utilized surface transportation mode in Finland. Roads need to have high availability, reasonable/good quality, and most importantly, provide for a safe journey. As with many public networks, the roads are encountering significant wear and tear, and there are limited/decreasing budgets to properly maintain the assets. A backlog exists in bridge repair and road resurfacing, which are the main challenges. Also, the recent harsh winter is already showing larger than normal frost heave damage to the roads.

The following SWOT (Table 11) shows that the Finnish Transport Agency is a client organization that procures most services from the private design, construction, and maintenance service providers. Finland is an innovative and pro-active country, where it joins limited countries around the world that have advanced to this phase.

Table 11. SWOT of client-supplier model in national roads

S	Core Role Realized as a Client	W	Inability to Influence Market Imperfections
	Strong Project Management Skills		Stagnation of Procurement Practices & Incomplete Contracts
O	Cost Savings	T	Problematic Quality Assurance & Control
	Customer Approach		Unclear Risk Sharing
	Purchasing Authority - Development of Procurement Practices & Define Quality Levels		Supervision of Contractors' Work
	Asset Management Approach		Asset Management in Its Infancy Development
	Planning Know-How & Stakeholder Cooperation		Unclear principles for prioritization of projects
	Transparency, Accountability & Public Disclosure		New organization has extra transactions costs, which reduces efficiency
	Environmental Stewardship		Unclear New Agency Position
	Efficiency & Effectiveness Improvements		Potential Loss of Effective R&D
	Partnering Potential		Market Capture by Few (cartels & private monopolies)
	Cost Control (no fixed assets)		Disputes & Arbitration
	Develop Good Contracts with Risk Sharing		

Strengths

A key strength is that the client role in procuring the services (when there is a functional market) has become clear. Customer service concepts are being addressed and are included to some extent into the decision making process. The Finnish Transport Agency has achieved significant savings during the restructuring process compared to the traditional model. Some administration strengths are planning expertise, focus on asset management systems, project management skills, setting the quality standards, and developing innovative procurement practices. Communications, key stakeholder

cooperation, and working relationships with the Ministry of Transportation and Communication are good practices.

Weaknesses

Despite the strengths there are some weaknesses. These include the total reliance on the market with its potential imperfections. Since all services are publicly procured they are dependent upon a functioning private market. Even though there has been significant effort to develop innovative procurement practices (world class) it is difficult to write complete contracts and include all conceivable risks into the contracts. Risks need to be clearly defined in the contracts as they will be priced by the private market and any unknown risks should be shared equitably. There also remain unclear principles for prioritization of projects.

Quality needs to be assured, have proper control mechanisms, and measured so that the services are delivered properly to the customers. Asset management systems have been developed, but they need to be improved and use newer technology to capture accurate asset condition and measure the contractor's performance. Issues that need to be improved are response to emergency, security, the environment, and prioritization list of projects to serve the users and the economy. The new organization now has a client-client supplier model that has dual transaction costs, which makes it less efficient.

Opportunities

The Finnish Transport Agency has the opportunity to further develop the systems and practices to become environmental stewards, have more efficiency gains, become more effective in operations, and to embrace partnering and leadership concepts. Also, the new organization structure has the potential to enhance coordination of several modes of transport and bring more value to the customers. Risk sharing needs to be further developed as an opportunity to improve relationships with the private market.

Threats

The immediate threat is how the new organizational structure of combining road, rail and waterways will function. Further contracting disputes and arbitration are potential threats. Cartels and private monopolies are also threats. Finally, the threat whose consequences are already apparent is insufficient research and development resources.

3.2.2 Supplier State-Owned Company Model

Destia Oy is a supplier State Owned Company (SOC) that was originally the supplier part of the Finnish Road Administration. It was restructured as a state owned enterprise in January 2001 and became a SOC known as Destia Oy during April 2007. Destia Oy supplies services for public and private infrastructure clients in consulting, design, construction, maintenance and other new business areas as traffic information and even windmills. Destia Oy also provides services for municipalities and it operates like a private contractor. The SWOT of SOC model is presented in Table 12.

Table 12. SWOT of supplier SOC model

S	Core Role Realized As a Supplier	W	Quality Control Systems Not Fully Developed
	Strong Project Management Skills		State Ownership May Place Restrictions on Business Development
O	Business Entrepreneurial Approach	T	Possible Protection from the Market (by owner)
	Freedom to Hire/Fire Employees & Salary Arrangements		Public image
	More Freedom From Bureaucracy & Hierarchy		Conflict Potential in Bankruptcy and Ownership
	More Flexible Decision Making		Political Intervention
	Better Administration, Management and Financial Responsibility (compared to traditional)		Poor Visibility/Reputation
	Access to Capital Markets		Insufficient Revenues/Profits
	Can Compete Internationally (if the owner permits)		Foreign Competition
	Freedom to Purchase & Sell Companies		Union Interference
	Potential for Innovation (compared to MOE)		Political Interference (corporate vs. public will)
	Diversification & Expansion Into Other Markets		
Partnering Potential			
Adoption of Customer Perspective			
Possibility to Take Business Risks			
More Flexibility of Pricing			

Strengths

Restructuring of Destia Oy has been a positive experience, aside from the recent bad media coverage of corruption, not unlike in other public and private companies. Nevertheless, the strengths are numerous and diversification into other business areas, such as traveller and road congestion information has already occurred. Other strengths include a clear position as a service provider of infrastructure services; Destia Oy is considered a viable contractor among peers. Destia Oy has strong project management skills, excellent pricing knowledge, freedom to hire and fire employees, less government interference and bureaucracy, flexible decision making, and financial stewardship. The SOC model allows greater freedom, flexibility, and decision making up to a certain point.

Weaknesses

The main weaknesses relate to quality control processes and making certain that the supply chain produces the desired quality rather than taking any shortcuts that might discredit their image. A potential limitation is any ownership restrictions placed upon the company and possible protection from the market.

Opportunities

The opportunities are greater than before. Destia Oy has ventured into new markets, such as wind mills, traffic information, expanding into the municipal market, and even internationally, as it secured full ownership of Finnroad (now called Destia Finnroad). Other opportunities are an easier access to financial markets, freedom to purchase and sell companies, consider partnering and joint ventures with other constituents, take reasonable business risks, exercise flexibility in pricing, and become customer oriented to market the customers directly. Also, they have the opportunity to develop their quality systems further.

Threats

On the other end of the corporate spectrum is the threat or opportunity of privatization. This can be politically motivated as seen by the recent lobbying by the unions and by others fearing foreign takeover. There is also a potential ownership conflict if bankruptcy would occur and if the current owner, the State, could allow the company go bankrupt (is Destia “too big to fail”). Poor financial performance is also possible through poor management, foreign competition, and a poor image, whether real or fictional.

3.3 Municipal Roads

Pekka Pakkala and Antti Talvitie

3.3.1 The Traditional Model

The Traditional Model (TM) implies full management and operational responsibility by the municipality or its designated administration, which is typically the technical department. The TM’s SWOT analysis (see Table 13) is based on the interviews from the roads/streets and through inputs received during the brainstorming workshops. It is possible that some traditional organizations might deviate from these, especially in smaller municipalities that have less bureaucracy and more efficient processes.

Table 13. SWOT of traditional road model

S	Internal Control Strong Municipal Reserves/Resources Including Risk Mitigation Worker Job Security Authority Position Large Balance Sheet (equipment, depots & assets) Knowledge of Working Methodology (those not subjected to private markets) Preferential tax treatment	W	High Cost of Own Workers, Equipment and Depots Lack of Competition Large Overheads Political Interference, Hierarchy & Bureaucracy Inability to Hire Experts (high wages) Lack of Innovation and Lower Productivity Unwillingness to Take Business Risks Inward Looking (no drivers for change) Non-businesslike management Rudimentary Customer Satisfaction Measures
	O		Increase Outsourcing (worker retirement) Can Provide Extra Quality if Needed & React to Emergency/Unplanned Situations Potential LCC & Holistic Approach (not fully realized) Reacting to Customer Feedback

Strengths

The main strengths of the TM are the internal controls and the strong municipal reserves and resources, including risk mitigation (by taxes or otherwise). One of the advantages of public management is the large balance sheet of assets, which may include depots, equipment, and real estate. Some of the characteristics include job security, knowledge of local working means and methods (which may be inefficient) and an authoritative position. Being part of the municipality government provides exemption from taxes. From the society’s point of view, the exemption from taxes and subsidies may however cause unwanted distortions. Work can be directed at any time to please the community or their subordinates. There is, nonetheless, an entrenched devotion to “*work as usual*”.

Weaknesses

The weaknesses of the TM include high cost of own workers, large overheads, political interference, bureaucracy, hierarchy, and an inward looking organization that is satisfied

with the status quo and does not push drivers for change. Customer service concepts are being addressed and somewhat included, but are still rudimentary. There is also an inability or unwillingness to hire experts when needed and readily accept new technologies that might be more efficient or productive. There is a potential or desire by some to use innovation or improved practices, but the lack of resources and the constant pressure of daily activities and paperwork hinder these efforts. It is difficult to be creative and take the high road, and there seems to be fear to stand alone and become a bold champion. There are no rewards for efficiency gains and lowering costs.

The main weakness though is the lack of competition or by simply ignoring it. In most municipalities there is a private market to provide maintenance services, but the municipalities using this model are required to employ their own workers as a first priority and only outsource the remaining services.

Opportunities

The municipalities using the TM have an opportunity to outsource in conjunction with a retiring workforce. They have the ability to react to emergency situations and possibly react to customer feedback and redirect their own workforce quickly for important services when necessary. If the municipality is integrated, having design, construction and maintenance there is theoretically the potential to develop life cycle costing, but typically that has not materialized.

Threats

Threats include the lack of political stability due to electoral cycles, the status quo nature, bureaucratic inertia, and underinvestment in the assets that may cause poor road conditions or even greater cost to fix them if left undone. The issue of taxes is a recurring concern as mentioned earlier.

There is nothing inherently wrong with the TM. However there has been lower productivity, fewer modern improvements, and inability to cope with higher expectations from society. The recent economic downturn has exacerbated the situation and the new financial crisis in the EU countries and globally may have a significant influence, especially with capital improvements and new projects. Employment of modern and efficient ways to cope with new challenges is needed and asset management tools for measuring asset conditions are lacking.

3.3.2 Municipally Owned Supplier Enterprise

In the roads/streets sector, there is only a handful of Municipally Owned Supplier Enterprises (MOEs) in Finland (presently estimated at four, with Kuopio and Espoo announced joining in January 2011) and they usually are in the large cities. One significant deterrent may be associated with the successful challenge to EU regarding the Finnish Road Enterprise, when it was competing with the private companies as a SOE. The EU decision declared that it is unfair as the MOEs cannot go bankrupt and do not pay corporate taxes. As a result, municipalities have made the decision not to compete with the private providers in the market. This in turn can have negative effects on efficiency and productivity gains, and certainly is protectionist. In general, the MOE is more efficient than the TM, but is not totally free from the municipal entanglements. The following will describe the SWOT for the MOE model (see Table 14).

Table 14. SWOT of supplier MOE model in roads

<p>S</p> <p>Large Balance Sheet (Equipment, Depots & Assets)</p> <p>Working Toward Self Sufficiency – Core Role</p> <p>Better Cost Accountability & Potential for Cost Knowledge</p> <p>Better Administration, Management & Financial Responsibility (compared to traditional)</p> <p>Improved Efficiency (compared to traditional)</p> <p>Cost Savings (compared to traditional)</p> <p>Worker Job Security</p> <p>Partial Independence (compared to traditional)</p> <p>Can Provide Services for Multiple Networks (other cannot)</p> <p>Preferential tax treatment</p>	<p>W</p> <p>Higher Cost of Own Workers, Overheads & Administration</p> <p>Lack of Flexibility at Change/Adaptation</p> <p>Same ICT Systems as the Traditional Organization</p> <p>Weakness of Negotiated Contracts</p> <p>Political Interference, Bureaucracy & Hierarchy</p> <p>Inability to be Efficient/Reduce Workforce</p> <p>Protection Against Competition from the Private Sector</p> <p>Stalled in Transition between Traditional & MOC</p> <p>Limits to Cost Efficiency as a MOE</p> <p>Limited Market and Lack of Competition</p> <p>Source of Market Imperfection (e.g. not liable for taxes, negotiated contracts with direct labor, & not subject to competition)</p>
<p>O</p> <p>More Business Oriented Operations</p> <p>Focus on Cost Efficiency</p> <p>Potential to Focus on Customers</p> <p>Potential to Focus on Innovation</p> <p>Continuous Improvements Approach</p> <p>Potential Opportunities to Sub-Contract</p> <p>Ability to Improve ICT & Other Systems</p>	<p>T</p> <p>Future Legal Structure of MOEs/EU Rulings</p> <p>Status Quo - Difficulty to Progress to a MOC</p> <p>Political Barriers in Decision Making</p> <p>Labor Unions</p> <p>Private Sector Demand of Level Playing Field</p> <p>Adverse changes in the tax code removing the preferential treatment</p>

Strengths

Compared to the TM the supplier MOE is better at accountability, administration and management, and it has partial independence. One of the significant changes was changing the financial and cost structure to accurately reflect the costs of doing business. As a result accountability and transparency were significantly improved. Efficiency resulted in savings and integrating the water and road services resulted in economies of scope. Being part of the municipal government provides exemption from full taxation. From the society’s point of view, the exemption from taxes and subsidies however causes unwanted distortions and imperfections. Since the MOE was created from the traditional organization they benefited by having a large asset balance sheet, competence with proven working methods, local knowledge, and job protection for their own workers.

Weaknesses

Similar weaknesses to TM remain: higher costs of own workers, inability to reduce the workforce, political interference, and a lack of flexibility. However, the main weakness is the negotiated contracts with the municipal client. These negotiated contracts are arbitrary and non-competitive (because they have to maintain their own workers as the first priority). Some municipalities have become stalled in the process and the decision makers have failed to progress to the MOC model (Turku has decided to restructure as a MOC in 2012).

Other MOE weaknesses include the use of the municipal ICT systems, which are antiquated and inefficient; and the exclusion to pay full taxes, which causes a market imperfection. These weaknesses limit the efficiency of the MOE.

Opportunities

There are several opportunities under this model. They include operation under business-like terms and conditions, potential for innovation and efficiency, an ability to focus on customer concerns, and reduce costs. Other gains are possible through increased subcontracting (can be limited in some municipalities), which reduces costs, and through a continuous improvement “ideology”.

Threats

On the downside threats include uncertainty about the future or legal structure of MOEs, which both are influenced by labor unions, political barriers, duplicate governance boards (with no value addition), and private market demanding a fair and equitable playing field. Other threats include the possible change in taxation (requirement to pay full VAT and other taxes), and probably most agitating, is being stalled as a MOE, and not allowed to compete in the private market.

3.3.3 *Municipal Client–Supplier Model*

The municipal client-supplier model is almost identical to the state client-supplier model (Finnish Transport Agency) mentioned earlier. On the municipal scale, numerous municipalities are using this model and it is presently the object of a special study. Currently there are at least 59 known municipalities in using the proper client-supplier model. These include, Varkaus (described later), Inkoo, Salo, Oulunsalo, Orimattila, Ylivieska, Oulainen and many more smaller communities. Several other smaller municipalities are using this model, but not all municipalities are studied or within reach of the present study (to collect data from all 342 municipalities would be an expensive undertaking). The client-supplier SWOT (Table 15) shows, that the client procures almost all services via competition for design, construction, and maintenance. Municipalities like Lahti are considered to be in this phase, but retain negotiated contracts with the joint MOC (Lahti District Technical Services Company) and are not using the client-supplier model properly. However, in the summer of 2010, Lahti publicly tendered three maintenance service contracts and one was won by a private contractor; Lahti District Technical Services Company won the other two contracts. Lahti is very near the true client-supplier model.

Table 15. SWOT of client-supplier model in municipal roads

<p style="font-size: 2em; margin: 0;">S</p> <p style="font-size: 2em; margin: 0;">O</p>	<p>Clear Understanding of the Client Role</p> <p>Market-Oriented Approach</p> <p>Planning Know-How and Stakeholder Cooperation</p> <p>Productivity and Technology Improvements</p> <p>Straightforward Budgeting in Long-Term Contracts</p> <p>Lean Administration and Management</p> <p>Definition and Delivery of Expected Quality</p> <p>Possibility for Substantial Cost Savings</p> <p>Transparency, Accountability, Public Disclosure and Lesser Political Interference</p> <p>Focus on Asset Management</p>	<p style="font-size: 2em; margin: 0;">W</p> <p style="font-size: 2em; margin: 0;">T</p>	<p>Incomplete Contracts & Ability to Develop Innovative Procurement Practices</p> <p>Risk Sharing can be Ambiguous</p> <p>Rudimentary Asset Management</p> <p>Functionality of Quality Definitions, Monitoring and Inspection</p> <p>Desire to Control Work Methods</p> <p>Rudimentary Customer Satisfaction Measures</p> <p>Inability to Influence Market Imperfections, Market Failures and Bankruptcy</p> <p>Uncertainty Regarding the New Approach</p>
	<p>To Become Internationally Recognized</p> <p>Efficient & Effective Asset Management</p> <p>Cost Control Because Less Fixed Assets (either equipment, depots or labor)</p> <p>Developing Risk Management</p> <p>Focus on Customer Satisfaction</p>		

Strengths

The key strengths are that the client role has become clear and that the role is to procure the services and not performing them. Customer service concepts remain rudimentary, but are being addressed and are included to some extent into the decision making process. Significant savings have been achieved during the restructuring process compared to the TM. In administration, the strengths are the expertise in planning, focus on asset management, setting the quality standards, and a lean staff. Communications, key stakeholder cooperation and working together with others are good practices. Most municipalities in this model have accurate cost data for easy determination of the budgets and enable streamlined administration.

Weaknesses

Despite the strengths there are weaknesses, which include the total reliance on the market for prices and the prospect for potential market imperfections. Risk sharing poses complications with which municipalities are not familiar. There will be difficulties to adopt innovative procurement practices and write contracts that include risk sharing into the contracts. Nonetheless, risks need to be clearly defined in the contracts as they must be priced in.

Quality needs to be assured with control mechanisms and measures so that the services are delivered for the customers as contracted. Asset management systems in most municipalities are at infancy and need significant development and experience in applications. Customer service concepts are being addressed, but are still very rudimentary. This is a noticeable deficiency in most municipalities as the knowledge resides in the senior road managers, who will retire soon, and is not recorded in asset management systems. It remains to be seen if the municipalities have and employ resources to use new technologies to capture accurate asset condition and measure contractor performance.

Opportunities

The Finnish municipalities have an opportunity to become internationally recognized for their advancements and efficient practices in infrastructure management. Further developments and practices include more effective operations and management, development of improved and innovative contracting practices, employment of new technology, and equitable risk sharing to bring more value to the customers.

Threats

Cartels and private monopolies are a threat in the client-supplier model. Another threat that has already become apparent is insufficient research and development. Uncertainty in the new organizational and administrative position is a threat as this is unknown territory for most municipalities. Some municipalities have significant deficiencies in knowing the costs for the capital and maintenance services, and this hinders being a successful client.

3.3.4 Varkaus model

The Varkaus model is essentially the client-supplier model. In the city of Varkaus, all the maintenance for the road network has been outsourced to a private company via competitive tendering for a 7 year period. Part of the agreement included transferring their direct labor force and equipment to the winning tender. There is a two year safety net for the previous Varkaus workers. After the first contract period ends, Varkaus is using the “true client-supplier” model. The SWOT of Varkaus model is presented in Table 16 and described in more detail below.

Table 16. SWOT of Varkaus model

S	Clear Understanding of Client Role Purchasing Authority Initiation of Customer Perspective Planning Know-How & Stakeholder Cooperation Ability to Develop Asset Management Definition and Delivery of Expected Quality Transparency, Accountability, Public Disclosure and Lesser Political Interference	W	Undocumented and Appropriate to Service Levels Incomplete Contracts (Lack of Documentation) Rudimentary Asset Management Final Decisions Made Politically Rudimentary Customer Satisfaction Measures
	Market Oriented Approach Efficient & Effective Asset Management Cost Control Because Less Fixed Assets (either equipment, depots or labor)		Uncertainty Regarding the New Approach Market Failures and Bankruptcies

Strengths

Strengths of the model include clear understanding of the client purchasing role and reliance on asset management. This requires that the quality is clearly defined in the contracts and that appropriate quality checks are developed. The change in Varkaus has resulted in less administration, bureaucracy, and political interference, and greater transparency and accountability. There also is a greater customer orientation. The planning and stakeholder relations remain client functions in Varkaus.

Weaknesses

One clear weakness in Varkaus is the lack of knowledge to write more complete contracts and the lack of a reliable baseline for the asset conditions and response times. The final decision to adopt this model in Varkaus was done by the city council, so it is likely that many other municipalities will encounter significant resistance and be a challenge to repeat. The model may be more applicable to smaller and medium sized municipalities. Customer service concepts are being addressed, but remain rudimentary. Asset management in Varkaus is simple and asset management systems need to be developed in a deliberate way. The procurement practices need to be re-engineered so that they clearly describe the quality standards and the means of enforcement.

Opportunities

The opportunities are to continue to develop the asset management systems that make Varkaus efficient and effective in retaining and using functional market. There is room for cost savings with fewer fixed assets and an opportunity to evolve into a good manager for the quality of services purchased.

Threats

The main threats are market failure, and uncertainty of the new approach.

3.3.5 Kerava Model

The Kerava model is a unique way to organize the services and their delivery, and how to structure ownership. In Kerava the technical department is structured as an official client Municipal Owned Enterprise (MOE) in which the six municipal departments are integrated into one enterprise. This represents a unique business model to achieve economies of scale and scope. The SWOT of Kerava is described below and introduces a new, albeit controversial concept for the municipalities (see Table 17).

Table 17. SWOT of Kerava model

S	Business Entrepreneurial Approach	W	Budget: Direct Labor Used First
	Integrating 6 Departments in MOE (economies of scope)		Political Interference and Hierarchy
	Best Value Management (direct labor or private market)		Inability to Leverage Assets
	Flexibility: Outsource or Use of Direct Labor		Difficult for Large Cities: Limited Ability to Use Economies of Scale
	Asset Management Focus		Not Financially Self Sustaining (no protection against asset depreciation)
	Ability to Cross-subsidize		“Strong Personality” Factor
	Risk Distribution		Rudimentary Asset Management
	Clear Understanding of Client Role		
	Preferential Tax Treatment		
O	Focus on Efficiency & Effectiveness	T	Changes in tax code that remove or lessen preferential tax treatment
	Focus on Customer Satisfaction		Absence of “Strong Personality” to manage the model
	Asset Management Focus		

Strengths

The strength of the model is the business entrepreneurial approach. It incorporates the economy of scale and scope of six municipal departments. The structure allows

flexibility in labor usage and an ability to cross-subsidize and distribute risks. Also, the model features a best value management that can either use own workforce or private market. Being part of the municipal government it is exempt from taxes. From the society's point of view, the exemption from taxes and subsidies may however cause unwanted distortions. The strengths also include a clear client role with a focus on asset management.

Weaknesses

The weaknesses of the Kerava model include its questionable applicability in large cities and, possibly, the presence of cross-subsidies. There is still a need to improve asset management skills as they remain rudimentary. There are minor problems with the ownership and governance (political interference). Perhaps the most important weakness is that this model is not financially self-sustaining and is unable to leverage assets, which is the main feature of a MOE: to be financially accountable and self-sustaining with the revenues obtained from the fees for services rendered. Another weakness is that the own workers need to be considered first as they must be employed and budgeted (similar to other MOEs or SOEs). This model was developed under a strong personality, which may also present a weakness.

Opportunities

The main opportunities include focus on efficiency and effectiveness, and customer satisfaction. Development of good asset management systems is also a clear opportunity. Over time, the direct labor force can also be right-sized or altogether eliminated.

Threats

Threats include changes in tax legislation, the absence of strong personality (in the Kerava case), and financial sustainability of the model.

3.3.6 Client MOE model

The client Municipal Owned Enterprise (MOE) is very similar to the Kerava model except that it does not integrate (six) departments into one MOE. Turku is the only known municipality using this type of client MOE. Turku uses revenues obtained from real estate land sales, fees, parking meter revenue and other fees to pay for road maintenance and capital improvements. At the moment revenues significantly exceed expenditures. It remains to be seen if this model's revenue stream is sustainable in the long run or if there is interference/intervention by the owner. The client MOE represents commercial business practices in order to meet the public service demands in the care of road assets. The SWOT for Turku (Table 18) is described below and introduces this new but challenging concept to the other municipalities. That the revenue stream is not directly associated with fees collected from transportation may cause acceptance issues.

Table 18. SWOT of Turku model

<p>S</p> <ul style="list-style-type: none"> Business Entrepreneurial Approach Asset Management System (YAOH) Clear Understanding of Client Role Lean Administration and Management Significant Leveraging of Assets Preferential Tax Treatment 	<p>W</p> <ul style="list-style-type: none"> Higher Cost from Supplier MOE Weakness of Negotiated Contracts Market is Limited – Source of Imperfections Procurement Needs Developing
<p>O</p> <ul style="list-style-type: none"> Opening the Market to Private Sector Focus on Efficiency & Effectiveness Continued Focus on Customer Satisfaction Improving Asset Management Development of modern procurement practices 	<p>T</p> <ul style="list-style-type: none"> Changes in tax code that remove or lessen preferential tax treatment Removal or Limitations in Dedicated Income Stream Sustainability from Real Estate Revenues Future Negotiated Contracts with MOC

Strengths

The strength of the model is the business entrepreneurial approach, which incorporates accountability for meeting the expenditures from revenues obtained. Also, the model features a clear perspective of the client role and functions with a focus on asset management. The model includes streamlined administration and management practices that define the quality definitions and service levels.

Weaknesses

The Turku model includes negotiated contracts with the supplier MOE, which costs are typically higher than those in the market. That is a weakness as the negotiated contracts are quite arbitrary and, unfortunately, they need to be continued with the future supplier MOC. How to measure and enforce the promised quality from the suppliers whose owner is the same is also a challenge.

Opportunities

The main opportunity is to open the market to private competition for the capital and maintenance services. However, the supplier MOE will be restructured into a MOC in 2012 and the Client MOC will have a 5 year framework contract with the new supplier MOC, a duopoly, which is limiting this opportunity. Other opportunities include focus on efficiency and improvements with the asset management practices and tools. Customer satisfaction needs to be improved to address the expectations of the public. If and when there is true competition for the services, Turku client MOE will be required to develop modern procurement practices.

Threats

Threats include changes in tax legislation, and the continuation of negotiated contracts. Also, the recent crises in the EU countries may be reflected in real estate revenues and result in deterred and deferred capital investments. If there is an opening of the market for competition, then innovative procurement practices need to be developed. The other uncertain threat is the potential removal or interference/intervention by the owner regarding the revenue stream.

3.3.7 Mikkeli PPP Model

Mikkeli is the only municipality that employs and represents the PPP model in a way that has not been duplicated elsewhere. The main feature is that the client and the private contractor enter into partnership to provide the maintenance and upkeep services, hence the name Public Private Partnerships (PPP). In the Mikkeli PPP model Mikkeli retains 60% share and the contract winner would have a 40% share of the partnership. This means that there is a broad and real partnership where the rewards could be shared. It was decided, however, that the preliminary savings would be reserved for future work under this agreement.

All of Mikkeli’s equipment fleet was transferred to the contractor at a fair market value and about 65 employees were transferred to the contractor. The contractor provides project management services, equipment, and uses the transferred workforce for the contract duties. After considerable discussion, pensions and other benefits would be retained for a 5 year period. The services include a comprehensive package for winter and summer maintenance, parks, open public areas, and leasing of some vehicles. The long term agreement has cost indexing for the first year and at 50% rate for the second year, after which the indexing is renegotiated. This PPP model is very traditional. It uses the same workers and only purchases the management function from the private contractor. There are no savings are reported or observed. Quality and worker protection were the main requirements.

The Mikkeli PPP contract is a comprehensive and integrated service agreement with a private company. The company manages customer complaints issues, maintenance, administration, management and other duties. There are unit prices for additional work and about two million Euros of construction work per year. The SWOT of the Mikkeli model is presented in Table 19 and described in more detail next.

Table 19. SWOT of Mikkeli model

S	Clear Understanding of Client Role	W	Essentially No Savings Due to Retaining/Having Previous Own Work Force (Retaining Public Benefits)
	Leaner Administration and Management		Incomplete Contracts (Lack of Documentation and No Sanctions)
O	Knowing the Yearly Cost for Maintenance	T	Market Position After End of Contract
	Local Knowledge & Knowledge of Working Methodology		Contract Default
	Stepping Stone to Outsourcing		
	Opening the Market to Private Sector		
	Focus on Efficiency & Effectiveness		
	Focus on Customer Satisfaction		
	Developing Good Asset Management Practices		

Strengths

Strengths of the model include clear understanding of the client role and cost knowledge for budgeting purposes. The model should result in less administration, management, bureaucracy, and political interference. Mikkeli’s own workers are used for local

knowledge of the assets and working methods. Knowledge and experience gained from this PPP model can be used as a stepping stone to outsourcing the services in the future.

Weaknesses

One weakness is the lack of knowledge how to write better contracts and have a reliable baseline for the asset conditions and response times. The final decision to adopt this model in Mikkeli was done by the city council under then prevailing circumstances. No savings have been reported and the model may not work well elsewhere. There has been duplication of inspection and other inefficiencies. Because the workforce and employee benefits have been retained, and the contract includes no performance incentives the costs have remained at the previous levels. There is much uncertainty; the model is an experiment whose one outcome is removal of the question mark on sustainability.

Opportunities

The main opportunity is to open the market for further competition and gain savings in procurement. Along with outsourcing, there is opportunity to develop asset management systems, become more efficient and effective, and begin tracking customer satisfaction. There is room for cost savings with fewer fixed assets and improvement in quality management of services.

Threats

The main threats are contract default and the situation after the exclusive contract expires. The other major issue is the uncertainty of the new approach.

3.3.8 Private Road cooperatives

There are about 15820 private road cooperatives in Finland and their characteristics are strong private ownership with a majority voting decision making process and one vote per each participating member. The cooperatives are responsible for maintaining and rehabilitating their roads. The cooperatives represent a total road length of about 52000 kilometers, most of them gravel roads and some of them serving summer cottages. According to the Finnish law the cooperatives can apply for state support for small improvements like drainage and bridge repair, but not for routine maintenance. Some municipalities support private road maintenance as a public service to affected residents. Overall, the private road cooperatives are a good model for low volume roads.

Table 20. SWOT of private road cooperatives

<p>S</p> <p>Private Ownership All Owners Equal/Shared ownership No Direct Political Control Majority Voting for Decision Making Quality Determined by the Owners Direct Cost Control (Working Bees) Low Cost of Maintenance and Operations</p>	<p>W</p> <p>Small-Scale Operations (~15800 coops) and Resulting Inefficiency in Management & Operations Owner Disagreements (can be a strength, too) Difficult to Manage Large Risks Possible Underinvestment by the Owners Difficulty to Raise Money to Maintain Asset Conditions</p>
<p>O</p> <p>Merge Operations & Management (economies of scale and scope) Access to Capital Markets (not practical) Potential for Government Subsidies</p>	<p>T</p> <p>Ownership Rights Can Deter Sustainable Development</p>

Strengths

Strengths of the private road cooperative are linked to the flexibility of the private ownership structure and operation of cooperatives. There is no political interference, and the cooperative with the majority voting decision-making process can determine the quality of services provided. The costs of the operation and maintenance are low compared to other models at the traffic levels in these roads. The concept of “working bees” is another strength, which can provide “free” services to the owners of the road association.

Weaknesses

The weaknesses of private road cooperatives include inefficiencies due to small scale operations and the lack of knowledge in road maintenance. There may be private owner disagreements when it comes to capital investments as risks are shared by all members. Due to sheer number of the private cooperatives, there may be inefficiency in management and operations, (but the costs are small and contained).

Opportunities

The opportunities include flexibility, low costs, and the possibility for government subsidies for improvements such as bridges and drainage. There is a possibility to gain economies of scale and scope by merging operations and management of neighboring and regional cooperatives. The private cooperatives always have access to capital markets, but it is rarely a practical option.

Threats

The principal threats are related to quality of service due to limited financing and ownership rights.

3.4 Ports

Jussi Rönty and Marko Nokkala

Finland has about 50 ports handling foreign trade transports, and ten of these are in the Lake Saimaa district. The target is to secure year-round services in 23 winter ports. In 2008, seaborne imports amounted to 58.1 million tons and exports to 44.3 million tons, totaling 102.4 million tons of seaborne transports. Almost 90% of Finland’s foreign trade passes through ports.

Administratively, public ports in Finland are, as a rule, locally owned entities. Some 30 of them are traditional municipal ports and around 10 municipal enterprises (MOEs). Today there are also two joint-stock company ports (MOCs) owned by local authorities and some privately owned public ports. Industrial enterprises own private industrial ports serving industrial plants in the vicinity of the port (e.g. Inkoo Fortum and Sköldvik Neste Oil).

3.4.1 Traditional municipal ports

Typically, a Finnish port is owned by a municipality. There are no state owned ports in Finland. A traditional municipal port is a legal part of the municipality’s budget unit. Table 21 presents the SWOT of traditional municipal ports.

Table 21. SWOT of traditional municipal ports

S	Creates security -> municipal employer	W	There is no role or only a limited role for the private sector in cargo handling operations
	Juridical part of municipality -> financial and other resources -> public control		There is lack of internal competition, leading to inefficiency
O	Preferential tax treatment	T	Operations are not user or market oriented
	Superstructure development and cargo handling operations are usually the responsibility of the same organization (unity of command)		Lack of innovation
O	Arrangements of profit and financing can be more flexible inside municipality	T	Public procurement rules
	Resources from the municipality for investments and development of operations		Slow decision making
			There might be less problem solving capability and flexibility in case of labor problems, since the port administration also is the major employer of port labor
			Wasteful use of resources and underinvestment as a result of government interference and dependence on municipal budget
			Changes in tax code that remove or lessen preferential tax treatment

Strengths

The strengths of this model include the stability and security that comes from public control and public recourses. Municipal ports are usually strong local employers both directly and indirectly. Also municipal ports are not liable for taxes from operating income, real estate or capital transfer.

Weaknesses

Weaknesses include the lack of competition and innovation that can easily lead to inefficiency. The decision making process can be slow and rigid, which can also have a negative effect on motivation to innovate more efficient ways of operation.

Opportunities

Opportunities for this model can be found mainly from the possibilities of greater financial flexibility within the municipality’s rule-making. Secure resources from the municipality for investments and operations development can also be an opportunity for the port.

Threats

Threats include the likelihood of inefficiency in operations that leads to wasteful use of resources. Underinvestment is also a notable threat.

3.4.2 Municipality owned port enterprises

Table 22 presents the SWOT of municipality owned port enterprises (MOEs).

Table 22. SWOT of MOE ports

S	Juridical part of the city/municipality -> financial and other resources -> public control Preferential tax treatment Creates security -> municipal employer -> contracting partner Impartial treatment of customers Foreclosure possible for fees under public law	W	Lack of legislation of MOEs -> formality of decision making (local government act) -> lacking independence Multi-phased and inflexible decision making process Inflexibility of pricing Public financing operations are not sufficiently transparent
	O		Arrangements of profit and financing inside MOE can be more flexible Strong resources for investments and development of operations Ports can perhaps continue as MOEs as EU does not interfere

Strengths

The most common ownership model for Finnish seaports is so called Municipal Owned Enterprise (MOE). MOEs are an independent accounting unit. The council of the municipality or a joint municipal board has granted a MOE a more independent budgetary status than to other municipal units. A Port MOE’s interdependent relationship with the municipality is strength. The close relationship with the municipality can also be an advantage in branding and marketing. Strengths also include impartial treatment of customers and, perhaps, the exemption from taxes.

Weaknesses

One essential weakness for this model is the lack of legislation for MOEs. The partial independence and inflexibility in decision making are also weaknesses. The municipal decision-making process is often multi-phased and slow. Publicly owned ports also have to follow the public procurement rules.

Opportunities

The opportunities of MOE are roughly the same as in the traditional model. However, arrangements of profit and financing inside MOE can be more flexible. Ports can also get loans and subsidies from the municipality. There also is the opportunity to evolve into a municipality owned company, but not many ports have done this transition. The restructuring process contains many risks and can be simply too expensive an operation to the municipality. If EU does not interfere in the operation of ports as MOEs, ports can perhaps continue as MOEs.

Threats

Threats include bureaucracy and political control that can restrain and slow down decision-making and innovation. The functioning of the MOE is not purely business like, which can lead to missed business opportunities and weakened competitiveness. Also, there is a threat that the exemption from taxation might change in the near future.

3.4.3 Municipality owned port companies

Table 23 presents the SWOT of municipality owned port companies (MOCs).

Table 23. SWOT of MOC ports

S	Flexibility of decision making -> faster decision making -> no public complaining processes Independent finance Freedom to make agreements and contracts Business-like management style Easier long-term planning More flexible salary policy	W	Weaker municipal back-up Liability to pay taxes Arrangements of profit and financing with the city is limited When the city/municipality is the owner -> public procurement rules
	Customer and business orientation Development potential due to business-like operation Co-operation with the private sector is easier Possibility to take business risks / taking advantage of opportunities Flexibility of pricing and rewarding Opportunities for institutional investors Access to capital markets External know-how to the board		Realization of business risks Conflict between owners' will and company's interest Prejudiced/partial treatment of customers Resistance to change in restructuring process Legal incompetence in municipality's decision making
O			

Strengths

The strengths of municipality owned port companies include flexibility in decision-making process, business-like management and operating style, and freedom to make agreements and contracts with other parties. There is clearly more dynamics in decision-making and co-operation with the private sector. More flexible salary and reward policy

is strength. There is an increased transparency in operations and economy due to separation from the municipality.

Weaknesses

Weaknesses include weaker municipal back-up, and above all the obligation to pay taxes from the operating profit. The company also has to pay other duties such as capital transfer tax when restructuring into a company. The transition into a MOC can be a very expensive process for the municipality. Also the financial arrangements with the city are much more limited compared to MOE.

Opportunities

Opportunities include the possibility to take business risks and loans from the market. There is also a development potential due to business-like operation, easier co-operation with the private sector, and flexibility in pricing and rewarding. There is also an opportunity to bring external know-how to the board.

Threats

Threats include the realization of business risks. Failure or conflict between owners' will and company's interest is also a notable threat. The owners control policy over the company must be properly secured before the restructuring.

3.4.4 Private ports

Fully privatized ports (which often take the form of a private service port) are few in number internationally and in Finland. There are only a few ports in Finland that are owned by private companies and industries, the biggest ones including Neste Oil in Sköldvik and Naantali, and Fortum in Inkoo. Table 24 presents the SWOT of private ports.

Table 24. SWOT of private ports

S	No direct (local) government interference	W	The government (national, regional, or local) loses its ability to execute a long-term economic development policy with respect to the port business
	Maximum flexibility with respect to investments and port operations		In case the necessity arises to redevelop the port area, government has to spend considerable amounts of money to buy back the port land
O	Ownership of port land enables market-oriented port development and tariff policies	T	Realization of business risks
	In case of redevelopment, private port operator probably realizes a high price for the sale of port land		There is a serious risk of speculation with port land by private owners
	The often strategic location of port land may enable the private operator to broaden its scope of activities		Conflict between owners' will and company's interest
	Customer and business orientation		Prejudiced/partial treatment of customers
	Development potential due to business-like operation		
	Co-operation with the private sector is easier		
	Possibility to take business risks / taking advantage of opportunities		
	Flexibility of pricing and rewarding		
Opportunities for institutional investors			
Access to capital markets			
External know-how to the board			

Strengths

The strengths of private ports include maximum flexibility in decision making, financing and port operations. Besides laws and regulations, there is no direct government interference or interest in the port. The port can freely select its customers and activities.

Weaknesses

Weaknesses include the non-existent municipal back-up and the comparative disadvantage to pay taxes.

Opportunities

Opportunities in this model include the development potential and easier co-operation with the private sector. There are also opportunities for institutional investors. Access to capital markets and flexibility in pricing and rewarding are also notable opportunities.

Threats

In fully privatized ports, the property is privately owned, unlike in other port management models. This requires the transfer of ownership of land from the public to the private sector. The risk in this type of arrangement is that port land can be sold or resold for non-port activities, thereby making it impossible to reclaim it for its original maritime use. Also, there is the possibility of land speculation, especially when port land is in or near a major city. The sale of land to private ports may raise a national security issue.

3.5 Rail

Pekka Leviäkangas

Table 25 shows the SWOT for Finnish railroads.

Table 25. SWOT of railroads

S	Thorough knowledge of the network, assets and services	W	Lack of competition
	Strong balance sheet		Governance model mixing political interests with business practicalities
	Good control of basic operations		Lack of innovations
	Provision of “strategic transport services”		Unclear cost and pricing structure
O	New technologies	T	Opening up the rail services provision market in Finland
	New pricing models		European Union legislation
			Lack of investment vision
			Maintaining competitive service at affordable prices

Strengths

Rail services in Finland are provided by VR, which is a State-Owned Company (SOC). The strengths of the ownership model are a thorough knowledge of the rail network and its assets. The services that VR needs to provide are also clearly specified and it has a clear function to perform. The company has a strong balance sheet and good control of the basic operations. In rural areas VR provides strategic transport services in underdeveloped regions, though at substantial cost to the taxpayers.

Weaknesses

Weaknesses include the lack of competition and innovations, which translate into inefficiency and monopolistic behavior in service provision and pricing. From management point of view the current governance model, where political interests are mixed with management of business operations, provides poor strategic advice to the management. Examples of this include unnecessary purchases of trains, not considering substitution of rail by less expensive and flexible bus services, and operation uneconomic services on uneconomic rail tracks and routes.

Opportunities

Opportunities for VR arise from new technologies and new pricing models. New technologies can improve the train speeds, the amount of cargo and passengers transported, and reduce the maintenance of trains and services. New pricing models, including peak hour traffic management, are already being tested through campaigns. It is likely that more flexible pricing schemes are introduced in the near future.

Threats

Threats to the current model come both from outside: opening of rail services to competition; the European Union legislation on monopoly industries. Internal disputes and challenges on investments in the current business model are also a threat.

3.6 Airports – Finavia

Antti Talvitie & Pekka Pakkala

Finavia Corporation is a client State Owned Company (SOC) and responsible for maintaining and caring of the 25 airports located throughout Finland. Finavia provides and develops its customers safe and competitive airport and air navigation services and supporting commercial operations at an internationally high standard. Airports play an important role in business, aviation, leisure and make an economic contribution to the Finnish society. Security, safety and regulations are very important aspects of the core business practices. Finavia has a monopoly position in Finland, but the competition is from the international airports in Europe.

Finavia’s main role includes airport services, customer services, and the commercial retail services. This requires various types of facilities, airport navigation, ground communications, arrival and departure information, air traffic control services, security, winter maintenance for runways, emergency services, transportation facilities, and other infrastructure services, training and education, as well as facilities for restaurants, retail and business. It is important to have safe, clean, functional, and operative services for the multiple types of clients and customers. Table 26 shows the SWOT analysis for Finnish airports.

Table 26. SWOT of Airports

<p>S</p> <ul style="list-style-type: none"> Business Entrepreneurial Approach Asset Management Focus Clear Understanding of Client Role Lean Administration and Management Flexibility: Outsource or Use of Own Direct Labor Cost Efficiency & Effectiveness Finnair as a Good Partner (Partnering Potential) Transparent Operations Customer Satisfaction & Surveys Good Regulation Practices Utilizing Marketing & Benchmarking 	<p>W</p> <ul style="list-style-type: none"> Sole Reliance on the Air Travel Market Lack of Personnel to Manage all Customer Issues Services are Profiled to International Travelers Balanced Scorecard is New & Requires Development Political Decisions at Higher levels (such as the subsidized rail line to airport, which may require cost participation from Finavia)
<p>O</p> <ul style="list-style-type: none"> Access to Capital Markets Freedom to Purchase & Sell Companies Potential for Innovation (compared to MOE) Possibility to Take Business Risks Further Efficiency – Staying in Core Role More Flexibility of Pricing Being a Good Client (fairness & values) 	<p>T</p> <ul style="list-style-type: none"> International Competition Severe Economic Downturn in Air Travel Inability to respond in terms of fees because of Finavia’s fixed cost structure Externalities – (such as Iceland volcano and weather) Labor Relations and Unions (at Finavia or the airlines served) Security and Safety Issues & Regulations Climate change regulations

Strengths

Finavia has numerous strengths. Many of them come from the SOC, the business entrepreneurial model. The SOC model allows much freedom in management and administration to ensure revenues and achievement of reasonable profit goals. Finavia

has a good understanding of its client role and practices good asset management principles and good stewardship for the numerous services required at airports. Lean and flexible administration practices are used and Finavia is able to either use its own work force or the private market to advantage. Besides safety and customer service, cost efficiency and effectiveness are the main objectives in order to provide a good return on the investment. Good governance, transparency, and fair practices to all involved with Finavia have been effective. Finnair is the most important partner, but Finavia also needs to provide fair, equitable and competitive services to other airlines.

A regular standard of practice is benchmarking, marketing and various types of analysis to maintain a strong business position. Finavia is vertically integrated through several sister companies for several of the needed services. Finavia has a large balance sheet of assets, which requires state of the art asset management practices and systems. Customer services and satisfaction are very important. Public satisfaction is important, but there are few other airport options in the market.

Weaknesses

The main weakness is the unpredictability of the air travel market. The market has been very good in the recent years, but needs continuous analysis and implementation of successful strategies. The administration is very lean and airports services can be short staffed and service points are often unmanned. Finavia has begun using the Balanced Scorecard (BSC), which is being developed to indicate Finavia's strengths and where service improvements are desirable.

There are occasional political decisions and interference, such as the recent subsidies to support the underground rail line to the airport, which increase Finavia's costs without benefit to Finavia. These political interferences, although undesirable, are a part of the provision of public goods and often occur in public ownership and governance.

Opportunities

There are numerous advantages and freedoms under the SOC ownership structure. Easier access to capital markets, freedom to purchase and sell companies, possibility to take reasonable business risks, pricing flexibility, and potential for innovation (such as the new baggage handling system). Other opportunities include further efficiency and cost cutting. Finavia desires to be a good steward and uses leadership principles of fairness and high values.

Threats

Air travel can be a volatile business. Management and operation of airports involves numerous threats such as competition from international players, a significant downturn in air travel, difficulty to devise competitive pricing schemes and fees, security issues, safety, and externalities such as climate change and sudden weather changes. Finavia has been able to manage winter weather quite well, but there may be other unpredictable weather circumstances in the future, such as the Iceland volcano incidence showed.

Overall, Finavia has proceeded through the ownership restructuring processes from a government administration to a SOE and recently to a SOC. The recent economic downturn, labor disputes either at Finavia or the airlines it serves, the Iceland volcano, and the recent economic crisis in the EU countries may create difficult situations, which will test the resiliency of the management.

4 Conclusions

Each infrastructure sector has its unique features regarding strengths, weaknesses, opportunities and threats. Some common features can be identified and this section identifies features that are common to all (see SWOT in Table 27). The state has been more proactive and advanced in restructuring its infrastructure entities than the municipalities. The state SOEs (now SOCs) uses modern asset management methods and procurement systems, and are lean and efficient. Their principal weakness is in (being allowed to) setting priorities, in pricing the services, and political interference.

Table 27. SWOT featuring all studied sectors

S	Day-to-day management Stable ownership Public values	W	Bureaucracy and deliberate processes Poor financial situation Lack of transparency and accountability Lack of cost knowledge Lack of knowledge of asset conditions Inflexible working agreements
O	Asset management development Technology and innovation	T	Inability for maintaining asset conditions Changing environment/demographics

Strengths

On the strengths, we have noted the management of day-to-day operations. Staff in the organizations knows the working methods, although they may be inefficient and outmoded, and they have good local area knowledge. Stable ownership is a result of municipalities' involvement, although it comes with aspects of governance that can be considered as weaknesses. Finally, the prevailing ethos prefers public provision of infrastructure networks, because these services are considered important to the well-being of the citizenry and have a strategic meaning in terms of security and safety, and deserves to be governed and owned publicly, and is hence strength.

Weaknesses

The constraints the sectors have are well documented: bureaucracy, lengthy decision-making and political interference. These are making operations slow and inefficient. Poor financial situation combined with lack of cost and asset condition awareness means that the entities' financial situation is not strong. The ownership structures are not transparent and the accountability of institutions towards taxpayers is not well developed. Finally, inflexible working agreements play an important role in the potential to modernize the infrastructure sectors. These can become an obstacle to

development if labor unions are not satisfied with salary levels, job security and other benefits. Strikes are the main means for the labor unions to extract benefits. Their effects can be significant as seen by the recent strikes at the ports, the flag carrier airline, and the bus company.

Opportunities

On the opportunity side, improved asset management appears to be one crucial element to improve the cost awareness and condition of the infrastructure networks. New technologies and innovations can improve the quality, timeliness and pricing of services. In most cities, there is no prohibition against knowing the costs, employing new technologies, change pricing of services, but rather the issue is motivation and incentives to acquire cost knowledge, use modern methods of asset management and pricing for their use.

Threats

The assets of the sectors face a problem of deterioration in physical condition and in value without maintenance and rehabilitation. Changing environment and demographics in Finland are also potential threat to service provision. Many sectors have limited resources to adjust the quality and quantity of services, either by increasing or decreasing service levels.

Good quality of services in the *water sector* is based on excellent and plentiful natural resources. Municipal support and control is considered to bring security, but political control and bureaucratic decision-making are serious threats in all municipality owned waterworks. Political interference in financing, investments and pricing of services jeopardize necessary infrastructure investments, efficient operation and cost recovery as required by law. To guarantee excellent service provision also in the future, systematic mapping of infrastructure conditions and proper investment allocation is needed. In addition, more transparent operation, clear cost accounting and freedom from tight political control bring opportunities for more efficient operation. MOE and MOC models are a step toward the right direction, but both have still unused opportunities for learning and improvement.

A functional, reliable and quality *road/streets network* has been considered a public good that has been managed and maintained by municipal employees. There were initiatives for restructuring in the late 1990s, but the process stalled as the resources were sufficient as Finland, in the early 2000s, experienced a prosperous economic situation and outlook. Now both have changed, the budgets are tight and the new fiscal crisis might help drive rapid change. There have been some minor advances toward the “*true client-supplier*” model to gain efficiencies and cost savings, especially in smaller municipalities. Turku and Kerava are forerunners at attempts using the client business entrepreneurial model and trying to incorporate asset management principles for the roads using modern practices. The main road block, and a demanding challenge, is to engage the decision-makers to approve changes in the stewardship and operations of the technical networks and make them function more like a public business. This would serve the customers better and allow technical directors to make good management decisions instead of repeating the patterns of the traditional status quo. It remains to be seen, in the near future, if the decision-makers will make wise decisions toward the “*true-client supplier*” model or embrace the business type client model. The SWOTs

show that the more advanced restructuring models have more flexibility, less political interference, better efficiency, and able to adopt asset management practices as opposed to staying in the traditional positions, where progress stands still and maintenance backlogs increase.

In the *ports*, the issue of fair competition can soon result in discontinuance of the municipal enterprise model (MOE). Ports operate in fully competing markets which now favor MOE-ports mainly because of the tax exemption and bankruptcy procedure benefits. Corresponding reform of municipal legislation is on its way. In the future, the municipal company model seems to be the obvious solution for this problem. Most of the interviewed ports have considered the option of restructuring into a MOC, but only two (Kotka and Hamina) have already done it. Another issue is the number of ports, which should be governed by the market. However, for the municipalities the port and the economic impact of the port are significant and it is unlikely that any of the ports would be closed by the municipality even in the current economic downturn. For the survival of the ports the supporting basic infrastructure, superior service, and competitive prices are the keys to ensure that they will remain competitive—and survive. Increasing co-operation with other ports and entities are important issues for the near future.

In general the most important strengths of the infrastructure networks' ownership, governance and operation are related to the stable and secure ownership from the municipal involvement and good knowledge of day-to-day operations. In this environment good management would be a plus. Bureaucracy, lengthy decision-making and political interference are however tough to overcome weaknesses. Combined with a lack of transparency and accountability, sustainable development and maintenance of infrastructure networks and services is endangered. This can lead to deterioration of physical condition and diminished value of infrastructure.

In addition, taxation differences; payment of interest without payments on the loan principal; and the maintenance backlog are the most disturbing findings in this study. The taxation issue is relevant especially for ports which are operating in the competitive markets, but also for other infrastructure because it may prevent meaningful and efficient consolidation of services, and also help continue the full-nelson grip the labor unions have on the municipal decision-makers. MOE is a good model and step forward, but it should be considered as an intermediate phase in the competitive markets. This is due to the fact that MOEs do not have to pay taxes and they cannot go bankrupt which gives them significant competitive advantage and distort the market. Another significant issue that concerns especially the waterworks is that loans from the municipality are interest-only loans (zero coupon bonds). This might cause severe financial problems in the future when infrastructure ages and needs repairs. The third issue which concerns all sectors is the amount of maintenance backlog that already has cumulated over the years and will continue to do so if nothing is done to reduce it. Only few municipalities know the condition of their networks and the extent of maintenance and rehabilitation backlog.

Improved asset management and cost awareness are crucial issues in all the sectors. It is important to have the motivation and incentives to acquire cost knowledge and use of modern methods of asset management and pricing. This requires changes in the concept, a change in the way of thinking, about management, governance, and stewardship of the infrastructure networks.

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