DEVELOPMENT STAGES OF FORMATION OF INTEGRATED TRANSPORT SYSTEMS

Pavel Drdla¹

Summary: The paper deals with the issues of formation of integrated transport systems. The mentioned three basic development stages are following: pre-integration stage, foundation stage and advanced stage. The paper highlights the necessary conditions that must be followed in the stages.

Key words: integrated transport systems; coordinator; carrier

INTRODUCTION

At present, we can see the preparation and meet in the Czech Republic on the preparation and creation of more integrated transport systems (ITSs). Prior the operating these systems follow the stages. Their characteristic is the aim of this paper.

1. DISTRIBUTION OF DEVELOPMENT STAGES

We can distinguish and recommend three typical development stages of ITSs.:

- 1. pre-integration stage integration efforts are being made on the basis of mutual agreements and arrangements (mostly bilateral) between subjects of ITSs;
- 2. foundation stage there is clear connection of subjects of ITSs and proclamation of ITS creation in the region;
- 3. advanced stage a coordinator of integrated transport is established as an organization and some extent a control subject of ITS.

Of course, this division serves as a methodical framework since the actual development, as the actual development stages in a specific region can have multiple forms. But they are so typical, that it makes sense to examine them in detail.

2. PRE-INTEGRATION STAGE

Pre-integration stage does not have a fixed structure. As it was already mentioned, the integration steps are made on the basis of bilateral agreements.

3. FOUNDATION STAGE

In a foundation stage is a formal establishment of ITS by the declaration of ITS subjects, which contains a pronouncement of interest for integration into ITS. Sign up of subjects for an ITS is also the initial definition of system area.

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¹ doc. Ing. Pavel Drdla, Ph.D., University of Pardubice, Jan Perner Transport Faculty, Department of Transport Technology and Control, Studentská 95, 53210 Pardubice, Tel.: +420 466036204, E-mail: Pavel.Drdla@upce.cz

At the same time the subjects must agree, on the subject of integration and its form. Then it is appropriate, for the subjects have declared their interest in participating in the ITSs and their commitment to the assumption of obligations, rights and obligations resulting from their membership in this system by substantial document - for example, so called the convention or memorandum of ITS subjects. It is desirable, when a part of document includes a project of ITS creation. This project contains a description of steps and their content.

The convention defines this system. By signing the convention signatories:

- 1. confirm their participation mandatory for ITS, consistent with their role and interest in providing public transport. Also:
 - o agree with a plan of creation of ITS; it is formulated in project,
 - o assume an active role in project belong,
 - o agree to takeover obligations,
 - o agree to participate in financing to cover costs associated with the organization providing this system;
- 2. for first step of the procedure for setting up of ITS namely:
 - o agree to establish the function of ITS (see below) in the first phase of the process and to promote its activities,
 - o to participate in the council of ITS administrator and respect its recommendations,
 - o to administrator or council of ITS administrator to provide the necessary information and documents the necessary organizational steps and economic calculations,
 - o to conclude the necessary bilateral agreements for the provision of public transport, which will follow the recommendations of administrator or council of ITS administrator.

It is appropriate, during the foundation stage an ITS administrator is appointed (next only "administrator"). It's basically a secretary of the creating system and its activities, are mostly of administrative and "federal organizational" character. He has no executive authority over other subjects, he only recommends. Responsibilities and competences remain to those subjects, which have existed before the creating of system. The administrator performs these functions:

- arbiter in the financial and transport issues,
- system representative against third persons and subjects,
- training and development organizer for higher levels of system.

Only one, or few, trained staff is sufficient to perform these activities. There isn't necessary to establish a separate legal entity as administrator. This administrator can be set aside as a part of authorities, etc.

The administrator is an evolutionary precursor to the ITS coordinator - see below.

It is appropriate that the council of administrator (next only "council") is established as an advisory board of administrator. The council is equally represented by all subjects of ITS. The council is established as a platform for discussion and agreement on common issues of ITS. The council especially:

- is the basis for discussion on issues between subjects of system,
- discusses and argues the parameters of financial flows,
- discusses and approves the projects for other development stages of system.

In foundation stage are realized the integration steps on the field of ITS technologies that are affordable and acceptable for subjects of system.

Basic rule applies here: "Nothing anyone can prescribe, the common volition and agreement are decisive.".

For a syndication of system subjects it is possible to create some form as association of municipalities, associations of carriers, etc.

4. ADVANCED STAGE

An advanced degrees of technology integration in the field of ITS are characteristic for this stage.

It may for example be achieved by an integral tariff system, high transport coordination, etc.

The existence of the ITS coordinator is typical for this stage (next only "coordinator"). It is an institution usually with legal identity. The main tasks of the coordinator are:

- 1. in relation to municipalities as an order party of transport service:
 - o taking responsibility for organizing transport services by public transport,
 - o monitoring and evaluating of transport needs,
 - o according and optimizing the way to ensure the carries needs in terms of transport technology, line structure and timetables to changes in demand,
 - o optimization and control of financial flows within the ITS,
 - o design and implementation of integrated tariff system,
 - o preparation and implementation of other development steps of system,
 - o communication with new applicants into the system and their integration;
- 2. in relation to passengers:
 - maintain and enhance the attractiveness of public transport over individual transport, that will be faster, more comfortable, cheaper and "prestige" to people and passenger;

3. in relation to the carriers:

- o defining of transportation orders for the current year and provide a coverage of integrated carriers of system on the basis of commercial relations between the coordinator and carriers,
- o coordination of line structure and timetables,

o cooperation with carriers in the long-term investment plans for the development of rolling stock and other necessary operating equipment, plans of financing, etc.

Contracts on transport service and financial relations are concluded for direct transport service assurance between the carriers and the municipalities of the region (or between carriers and coordinator).

There is no change in the area of subsidies from the municipalities in the operation of public transport. Subsidies can be routed directly to carriers. Carry ticketing is provided also by carriers, who are also beneficiaries of revenues from the sale.

The coordinator can complete a documentation regarding the conceptual and organizational areas of ITS for municipalities on the basis of "contracts for work". Agreements on cooperation in the coordination and optimization of public transport are entered between the coordinator and the carriers.

Institutors of coordinator are usually the municipalities of the region. Institutional form can be varying, but typically as the legal personality.

If the public company is the legal form joint-stock company or limited liability company, then is possible to recommend the following rules:

- the municipalities of the region are institutive subjects for coordinator (the municipalities enter into ITS to the base of their interests);
- members are represented by the general meeting of coordinator;
- voting rights of members (municipalities) of general meeting are proportional to their population numbers.

The general assembly includes especially:

- approval of the statutes and amendments,
- approval of annual accounts, profit sharing and reimbursement of losses,
- approving the accession of a new partner and the expulsion of a shareholder,
- the optional requirement of the decision of shareholders,
- approval of the concept development of ITS,
- approval means the determination of the individual "clients" of transport service (municipalities, etc.) to cover losses (i.e. the amount of subsidies),
- approval of the proposal for a tariff system.

Coordinator employs a necessary need of full-timers for direct staff or outsources the tasks listed above. Coordinator has its own budget; the expenses are covered by the shareholders in proportion to population numbers.

It is appropriate, that the coordinator establishes a council of coordinator, consisting of representatives of members (municipalities), carriers and other relevant subjects, which have an important interest in this ITS. The council is to discuss relations between the coordinator and other stakeholders, to discuss problematic of transportation and economic issues of ITS organization. Council prepares recommendations to the coordinator.

It is recommended that the carriers involved in ITS build a specific form of organization ("association of carriers"), which is a partner of the coordinator. As an appropriate form it is an association of legal persons.

5. CONCLUSION

There are some reasonable steps in the process of ITS creation. Because of their importance the steps should be included into the foundation or advanced stages. Advanced stage is not final, because during the existence of the ITS the gradual improvement is important a gradual improvement. The system has to must respond to this. The procedure can be further complemented by steps that take into account local specifics.

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REFERENCES

- (1) VONKA, J. et al. *Osobní doprava (Passenger Transport)*. 2. zkrác. vyd. (2. contracted printing) Pardubice: Tiskařské středisko Univerzity Pardubice, 2004. 162 s. ISBN 80-7194-630-3.
- (2) Integrace dopravních systémů a zajištění dopravní obsluhy v regionech (An Integration of Transport Systems and Transport Service in Regions). Výzkumná zpráva (research report) PD602 340 602. CS-Project, Praha, 2000. 32 s.
- (3) Projekt optimalizace dopravní obslužnosti Jihočeského kraje část II: Systémový návrh Integrovaného dopravního systému Jihočeského kraje (The System Project of Optimization of Transport Service in Region South Bohemia part II: System Design of Integrated Transport System in Region South Bohemia). CS-Project, Praha, 2003. 106 s.