



Designing new transportation society through IATSS activities



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ARTICLE INFO

Available online 16 June 2014

Keywords:
IATSS VISION
Program
Advisory committee
Next-generation mobility and society
50th anniversary

ABSTRACT

The year 2014 marks the 40th anniversary of IATSS. Therefore, the president expressed his view on the future direction of IATSS activities as the IATSS VISION in 2012. This paper aims to present the results of a survey conducted by the special advisory committee, which was organized to actualize the IATSS VISION, and consider next-generation mobility, society and IATSS activities.

The current direction discussed in the committee is as outlined below.

- (1) The goal of IATSS activities should be “Global Safety on Traffic.”
- (2) The methodology should go beyond the existing “Interdisciplinary” approach.
- (3) The new viewpoint needs to transcend “Hardware and Software.”
- (4) The conventional “International Cooperation” process is no longer sufficient.

The advisory committee plans to present the final report in the spring of 2015.

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1. Introduction

In the lead article of this special commemorative issue, Dr. Takeuchi, vice-president of IATSS, emphasized the importance of the “transdisciplinary”—the new concept beyond “Interdisciplinary.” “Transdisciplinary” efforts will be more dynamic and require more communication with the related stakeholders.

IATSS has been a front-runner of interdisciplinary activities in its field. As we approach the 50th anniversary of IATSS, how should we establish a new stage of IATSS activities? Continuous development is the key; therefore, we have started to discuss the next direction to pursue.

2. From IATSS VISION to its program

On September 20–21, 2012, the IATSS international workshop, Transportation and Safety for the Coming Age, was held at UN University in Aoyama, Tokyo. Then IATSS President Oguchi declared the IATSS VISION to the world.

The year 2014 marks the 40th anniversary of IATSS. Therefore, the president expressed his view on the future direction of IATSS

activities to not only IATSS members but also people all over the world (Fig. 1).

The IATSS VISION states “IATSS (International Association of Traffic and Safety Sciences) declares our determination to undertake a more global, more interdisciplinary effort to develop hardware, software, and ‘mindware’ that will enable people, working with science and technology, to achieve a new transportation society.”

To actualize this vision, it was decided at the 2013 board of directors meeting that an advisory committee should be established to discuss how the IATSS should be deployed as a tangible program toward its 50th anniversary. This committee is formed primarily around four directors who have experience in activities as IATSS members (Table 1).

The committee's first action was to conduct a survey with IATSS members, overseas visiting members, directors, evaluators, and advisors to evaluate IATSS activities up to the present and collect opinions on what IATSS activities should like going forward. The committee has also been hosting hearings with intellectuals in Japan and overseas (Table 2) to discuss and define how IATSS activities should be devised to incorporate long-term changes in society.

It is the aim of this paper to present this committee's survey results and consider the next-generation mobility, society and IATSS activities.

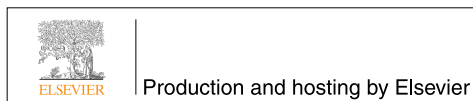
3. Opinions from the IATSS affiliate: on the IATSS future activities

3.1. Survey methodology and basic information on responses

The survey was conducted by e-mail in June 2013 to 14 IATSS visiting members, 17 advisors, and 12 editorial committee members (6 of whom

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Peer review under responsibility of International Association of Traffic and Safety Sciences.



were also committee members and/or advisors) for a total of 37 overseas participants, and by e-mail and post in July of 2013 to 50 IATSS members, 68 advisors, and 7 directors for a total of 135 domestic participants.

The results of the survey were responses from 31 participants (9 overseas and 22 domestic). The response rate was 18%.

3.2. Survey results

3.2.1. Evaluations of IATSS activities until now

Domestic participants were asked questions about IATSS activity evaluation until now. They rate the achievements in doing timely research high that is meaningful for society and proposing policies such as close-call movements, scrambled intersection research, special earthquake disaster projects, roundabout research, etc., as well as providing international contributions based on international linkage activities such as overseas human resources development.

3.2.2. Current direction of IATSS activities

In terms of issues IATSS should confront, there were calls for traffic safety education and enhancing regulations related to traffic safety, installing road facilities that increase safety, conducting research from the perspective of environment, economics, and/or welfare, evaluation of new traffic technologies, responding to public transportation, and motorbikes. While opinions focused on traffic accident research activities, many more suggested that a broader meaning of “safety on traffic” be adopted.

When asked which efforts particular to traffic accidents are necessary, participants provided opinions that efforts should be added for transportation infrastructure maintenance, vehicle safety standards, education of specialists and establishment of specialized research organizations, traffic safety education and training, and appropriate traffic regulations. Some opinions indicated there was still much to do in terms of recognizing low- and middle-income countries and putting greater effort into the safety of certain transportation means such as walking, bicycling, tuk-tuks, and rickshaws and researching systems suitable to the value and lifestyle of each country. Others indicated there was still much to do in terms of research into evaluation and utilization of new information technologies, and improvements in global traffic safety data.

Suggested themes for further investigation included the back-casting type research with a long-term view, international comparative research related to safety and security, research taking historical and cultural backgrounds into consideration, research contributing to the resolution of traffic safety issues in Asia where development is remarkable, research that takes declining birthrates in aging societies into consideration, research on disaster-aware traffic systems, and research that takes energy issues into consideration.

4. Designing new transportation society: through IATSS activities

While there are discussions on the future direction of IATSS activities as a result of these opinions from IATSS affiliate and hearings with experts, I personally feel that the current direction is as outlined below.

4.1. Goal: global safety on traffic

About 7 billion people are living on Earth. Unfortunately, 1.24 million people died on the world's roads in 2010. Furthermore, another 20 to 50 million sustained nonfatal injuries as a result of road traffic accidents. These injuries and deaths have had an immeasurable impact on the families affected, whose lives are often changed irrevocably by these tragedies, and on the communities in which these people lived and worked [1].

Looking further into the future, more than 50 million deaths and 500 million serious injuries on the world's roads can be projected

with some certainty over the first 50 years of the century unless new sustained initiatives are taken [2].

Tackling this situation, the United Nations General Assembly adopted resolution 64/255 in 2010, which proclaimed a decade of action for road safety. The goal of the decade (2011–2020) is to stabilize and reduce the increasing trend in road traffic fatalities, saving an estimated 5 million lives over the period.

Of course, there has been a multitude of efforts to reduce traffic accidents. IATSS has conducted “IATSS Forum” receiving individuals associated with developing nations, boasting 870 graduates thus far and providing numerous workshops. However, warnings from the UN indicate that even greater international efforts are needed.

On the other hand, transportation is in fact becoming ever more entangled in energy and environmental issues. In 1973, the transportation activities occupied 45.4% of globally consumed petroleum, whereas that figure increased to 62.3% in 2011 [3] (Fig. 2).

This suggests a percentage similar to CO₂ emissions from the use of petroleum. The increase of CO₂ causes global warming, whose impact is associated with extreme weather phenomena and is said to be linked to the occurrence of many large natural disasters in recent years, as reported in the 2012 international workshop. Transportation is closely related to global resources and environmental safety.

And, needless to say, accessibility to transportation has a large impact on the future of each people and their sense of fulfillment in everyday life.

In 2002, the World Bank published “Cities on the Move,” which has a strong focus on poverty. That report identified three aspects of urban development.

- (i) Urban transportation can contribute to poverty reduction both indirectly through its impact on urban economy, and hence on economic growth, and directly through its impact on the daily needs of the poor.
- (ii) Urban growth increases transportation costs.
- (iii) Urban growth often has adverse distributional effects.

As cities expand, the price of more accessible land will increase. The poor are forced to live on less expensive land, either in slums or on the periphery of the city. As average incomes grow and car ownership increases, the patronage, financial viability, and eventually quality and quantity of public transportation diminishes. Motorization, which is permitted by the growth process, may thus also drive some poor further into poverty [4].

The vulnerability of the urban transportation system brings wider gaps between rich and poor and will undermine the stability and security of society (Fig. 3).

Furthermore, it has been estimated that there are more than 1 billion people in the world with some form of “disability” (15.3% of the global population). Among these, “nearly 200 million people experience considerable difficulties in functioning” (2.9% of the population). More than half of the population aged 60 years or older in many developing countries is suffering from moderate to severe disabilities [5].

Transportation accessibility is essential for them to participate in the society.

The issue of traffic accidents problem has been very important. It must be the basic theme of our IATSS activities. However, global safety should be discussed from various viewpoints.

Our goal should be “global safety on traffic”.

4.2. Methodology: beyond “Interdisciplinary”

Since its inception, IATSS has brought together members from a range of fields in recognition of the need to respond to various aspects of transportation and safety. While domestic IATSS members number only 50, they are experts in fields of city planning, land and infrastructure planning, law and economics, and even medicine and psychology, not to mention the obvious inclusion of transportation engineers.

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