PERFORMANCE OF ROAD ADMINISTRATIONS

19 September 2007 (pm)

TECHNICAL COMMITTEE 1.3
PERFORMANCE OF ROAD ADMINISTRATIONS

INTRODUCTORY REPORT

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EXECUTIVE SUMMARY

PIARC Technical Committee 1.3 was tasked with identifying good practices for Road Administrations (RA) based on the view that their performance partly depends on the governance of the organisation and the structure of the environment within which they operate. In addition the Committee was asked to identify policies, practises, and resulting recommendations for eliminating corruption, improving human resource management and the use of performance indicators.

PIARC work programmes have not addressed the issue of integrity building in RA previously. However the Committee considers this as an extremely important but sensitive matter.

If Integrity is not assured, RA performance will always be endangered. The Committee concludes that basic corruption fighting strategies need to be executed using an "integrated approach".

Following its analysis, the Committee found that it is not practical to specify good practice for a RA purely on the basis of the road system (the state of maturity of its road network). It is postulated that the governance architecture should represent the products and services required of the RA. The Committee concluded that the governance architecture, consisting of such elements as roles & responsibilities, use of performance indicators and accounting & reporting, should be aligned with the types of activities the RA performs. This implies that the activities in the fields of for example road policy development, road construction and operation may require different governance options. They also depend on other factors such as the extent of procurement and outsourcing, the maturity of the infrastructure network, the way the activities are funded and the importance that is given to user influence in different areas and at different stages in road infrastructure management.

The way ahead in the field of human resources for RAs will be an extremely challenging one, and include for instance addressing the issue of an imbalanced, aging workforce. The Committee has identified a number of areas that need to be addressed and ideas on how to do so. These include, approaches for engaging young people and strategies for the recruitment and retention of staff, as well as maximising their productivity. In the majority of cases the ideas identified are already used successfully by RAs around the world.

In the area of performance management the Committee identified a complex framework for the appropriate use of performance indicators for different purposes. These included strategic decision-making and performance measurement and management at different levels between policy setting and actual delivery. To reduce the complexity some good practices for the use of performance management were described, and a decision tree was developed to guide RA's to appropriate performance indicators. Using a framework developed by the Committee these performance indicators are selected from a database of performance indicators that are actually used by PIARC members.

Based on this report the Committee has drafted the following conclusions.

- Integrity is the foundation of good governance in all economies
- The governance of a Road Administration should be tailor-made for their assigned responsibilities and circumstances
- Stronger customer or user influence is an important input to efficient management
- Road Administrations should focus on interfaces in the value chain and its own position therein
- An imbalanced, aging workforce is a major threat for the continued successful operations of Road Administrations
- An innovative, co-ordinated approach for engaging young people has to be found in order to attract them to engineering profession particularly to the road sector
- Effective strategies for the recruitment and retention of staff, as well as maximising their productivity are the core Human Resource Management elements needed for the continued successful operation of Road Administrations
- Supervisors, clients, partners, contractors and the Road Administration should have a clear understanding of the way certain sets of performance indicators will be used
- The definition and usage of performance indicators should be aligned with the different purposes being served
- In using performance indicators, efficiency should be a factor.

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1. INTRODUCTION

1.1. Preamble

The World Road Association (PIARC) has established a Technical Committee, TC1.3 Performance of RAs to undertake activities in accordance with the PIARC Strategic Plan 2003-2007.

TC1.3's goal is to give recommendations and present good practices in order to improve the performance of Road Administrations (RA) in the provision, operation and management of road infrastructure and its use.

The Terms of Reference of the Committee are to identify and disseminate information relating to the following issues:

- Governance and structure of Road Administrators
  - Recommendations according to the various development of the road systems
  - Best practices to meet the diversified needs of road users and stake holders
  - Best practices for eliminating corruption
- Development of Human Resource skills
  - Recommendations on the need of competences necessary for future challenges
  - Recommendations and best practices on new ideas and innovations in the field of education and training
- Applications of performance indicators of the road system
  - Best practices to improve the transparency and efficiency of administration through the application of performance indicators
  - Categorization of performance indicators as they are actually used
  - Best practices for policy evaluation and the application of the results for integration into new projects

Three working groups have undertaken the work of the Committee. These groups deal with the three main issues as mentioned above. All working groups use the same general framework of the Committee as a foundation. This framework is being described in the next paragraph. Sections 2, 3 and 4 will introduce the preliminary results for each main issue. The details of the terms of reference of the Committee will be presented in each section.

1.2. Introduction to the report

Technical Committee 1.3 were asked to look for good practices for RAs based on the view that their performance partly depends on the governance of the organisation and structure of the environment within which they operate. The impact of human resource management and performance management were to be studied as well.

The Committee found that it is not practical to analyse good practices for a Road Administration (RA) purely on the basis of the state of maturity of its road network. Whilst the maturity of the network can be a useful broad indicator of the role of a RA it is postulated that the governance architecture should represent the products and services required.

The Committee identified RA's can have a different sets of responsibilities, tasks and activities.

The Committee concluded that the governance architecture, consisting of such elements as roles & responsibilities, use of performance indicators, accounting & reporting and the quality of interaction with stakeholders[1] should in the main be aligned with:
- the types of activities the road administration performs,
- the purpose for which governance instruments should be used[2] and
- the priorities of its stakeholders.

In this report the findings of the Committee about good practices for organisational governance and structure for road administrations with different task portfolios and in different environments are presented. Much attention is given to case descriptions of interesting solutions from individual PIARC members.

To cover the area of performance of road administrations in its Terms of Reference the Committee used a framework introduced by which translates the context a RA operates in to governance architecture. The framework distinguishes five elements in governance architecture: organisation & processes, performance management, human resources, institutional integrity and the quality of interaction with its stakeholders. The Committee decided to produce good practices on each of these governance dimensions.

Explanation of the Approach
The governance approach is derived from a more encompassing framework that is depicted in figure 1. This framework referred to as the general framework of Technical Committee 1.3 focuses on translating the environment through strategy and organisational structure into public value delivered.
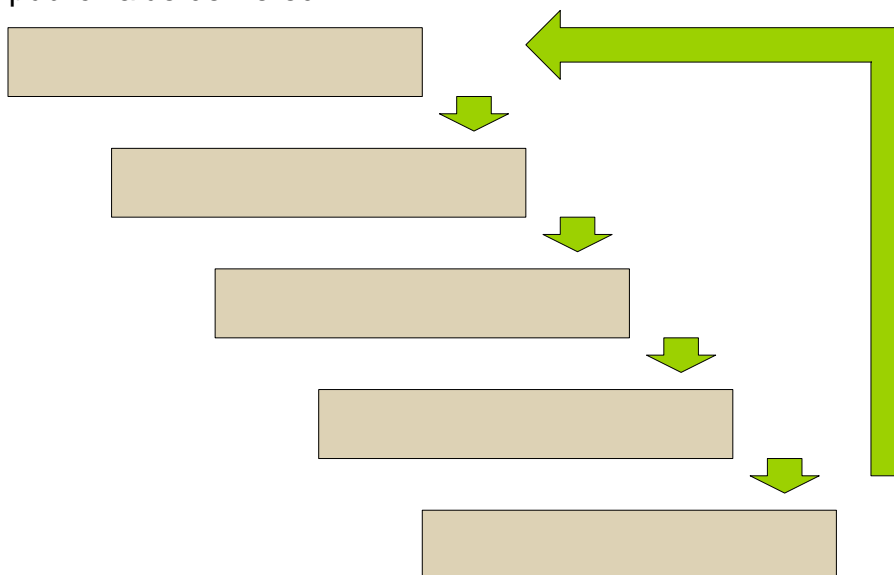

Figure 1 – General Framework of Technical Committee 1.3

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[1] The selection of governance aspects have been derived from several sources with an instrumental approach (IFAC, 2000) and a deliberation approach (Goldsmith et al, 2004)

[2] Hofstede 1981 and Merchant 2003

In order to create value for its stakeholders a road administration should translate its environment or its context into a strategy. The strategy should define the road administration's performance objectives, given the use of knowledge and the use of its strategic assets. Road administrations not only needed to develop a strategy, but should also define the various aspects of governance of the organisation and needed to implement that strategy; the so-called architecture. Through incentives, people can then be stimulated to perform the right actions to deliver public value. The architecture contains the following elements, selected by the Committee:

- Organizational Structure & Processes, e.g.
  - Roles and responsibilities
  - Separation of ownership of the RA and principality to the RA
  - Involvement of private sector
  - The role of a Road Board
- Quality of deliberation with stakeholders, especially users
- Institutional integrity, e.g.
  - Institutional, preventive and control measures
  - Awareness, involvement and knowledge on corruption
- Human resource management, e.g.
  - Competence levels
  - Internal and external assessing competence levels
  - Training and education curricula
- Performance measurement, e.g.
  - Internal and external performance measurement
  - Nature and development stage in which performance indicators are used

In the analyses of the Committee there are two inseparable and interdependent levels to the architecture design: governance architecture as seen from the parent ministry and governance architecture for the internal effectiveness and efficiency of the RA. For instance, the mandate of the RA is an architecture decision for the parent ministry. The extent of procurement from private parties by the RA is either an architecture decision of the RA, an architecture decision of the parent ministry, or a joint decision. Both the parent ministry architecture level and the RA level architecture are addressed in the good practices in this report and the report on the application of performance indicators. Incidentally, performance indicators are further used to monitor the context and to help to evaluate policy setting and RA strategy as well. In the report on performance indicators this is duly recognised and part of the scope of the performance indicator categorisation.

1.3. Data collection by the committee

A questionnaire on governance was developed to generate input for expert meetings on what RAs currently do on different governance issues. The questionnaire was based on the general framework of TC 1.3. The main objective of the questionnaire was to gather information on the main issues as described in the terms of reference, namely governance and structure of RAs, development of human resources skills and application of performance indicators of the road system. It was presumed that methods currently used by RAs have proven themselves in practice and therefore can contribute to formulating good practices. Given the number of variables identified in the terms of reference and the number of RAs who would participate, it was clear in advance that just the questionnaire itself would not yield all good practices.

However the expert discussions on the data collected to draw up conclusions, inferences and recommendations for governance good practices enriched with the questionnaire results will form the basis for the Technical Reports

2. GOOD GOVERNANCE

This section of the report addresses the Strategies and Outputs of the Terms of Reference detailed in Table 1 below. Furthermore the good practices identified, are illustrated with results from the questionnaire.

Table 1 – Terms of Reference Relevant to the Governance and Structure of Road Administrations

Issue 1.3.1	
Governance and Structure of Road Administrations	
STRATEGIES	**OUTPUTS**
Analyse the evolutions of the modes of organisation of road administrations and of their resources	Recommendations according to the various development of the road systems
Identify, for the different levels and bodies of road administrations, best practices to meet the diversified needs of road users and stakeholders in accordance with a country's socio-economic development level	Best practices to meet the diversified needs of road users and stake holders
Investigate policies for eliminating corruption	Recommendations

2.1.   Integrity building in Road Administrations

PIARC work programmes have not addressed this issue previously, however the Committee considers this as an extremely important but sensitive matter.
If Integrity is not assured, RA performance will always be endangered. In addition, given the large sums involved and the long worldwide history of collusion in the Road Sector integrity, the risks of integrity being compromised are very high. The simple rule is that. the larger the sums of money involved, the larger the potential for corruption. Therefore, awareness of the integrity issue and measures to guard integrity always should remain a major element of the governance architecture of RAs.

The Committee concludes that basic corruption fighting strategies need to be executed using an "integrated approach". The strategy should be evidence based, non-partisan, transparent, inclusive, and comprehensive and impact oriented. Furthermore this strategy can only succeed when certain principles, rules and practices are followed. Among these are election of legislature and free and fair elections; public service organised to serve the public and an independent and free media. When implementing anticorruption measure one must realise combating corruption, building integrity and establishing credibility requires time, determination and consistency.

2.2. Tailor-made organisation and structure for different tasks

Regarding organisational governance & structure, the literature and the experience of the members of the Committee show that performance of RA depends on the integrity of the organisations involved with road infrastructure and the fit between its governance architecture and the environment within which it operates. It is the main finding of the Committee that to enhance RA performance both the organisational governance, structure and the use of performance indicators should be tailored to the main activities within the RA responsibility area.

RA conducts familiar activities such as developing road network policy, high level planning and development, construction and reconstruction, road maintenance, operations, registration and licensing and sometimes related activities like the monitoring and enforcement of rules and regulations.

The Committee derived from this group three main categories of activities typically executed by road administrations requiring different governance architecture:
- strategic planning & policy making;
- capital investment, that is the (re) construction and upgrading of roads, and;
- service level delivery, mainly consisting of maintenance and operations.

The responsibility area of an RA can contain any combination of these activities, combined with more or less procurement or outsourcing.

The nature of strategic planning and policy is that of a staff activity. The nature of investment is that of projects, the nature of service level delivery is providing a continuously needed service. It is the opinion of the Committee that for good RA performance for these different types of activities different governance architecture with different organisation & structure designs is required. The Committee has defined governance good practices for each of these aspects. A good practice related to strategic planning & policy for instance is to guarantee good quality stakeholder influence through deliberative processes in the planning phase. Construction of roads for instance requires a project organisation that reports frequently to the principal party who gave the assignment. More in general, capital investments should employ a life cycle approach during all phases of projects.

Service level delivery requires stable service rate agreements with much attention to actual user needs. Maintenance requires a service level agreement with a different approach to monitoring by the principal than for a major construction project, operations typically ask for information on both the RAs performance and the actual effects achieved.

It should be noted that all three types of activities and organisations could be present within one single RA, and that then for optimal performance several types of governance architectures can and should co-exist. It is also possible that the RA only focuses on one of the three types of products and services. Each type of organisation thus should incorporate different governance structures and government instruments depending on the mix of its activities.

Road Boards
Road Boards exist in different types with Road Boards who act as a supervisor are usually appointed by the Minister to exercise governance over agencies. They are sometimes used to secure governance in this field or are being used as a perceived advanced type of governance in countries with a mature network. Road Boards who act as an advisory boards are used to articulate the demands of road users and other stakeholders to the use and impact of the road infrastructure.

The Committee recommends a clear distinction between these functions and to clearly document its functions and responsibilities and the accountabilities of the RA concerned.

2.3. Customer or user influence

A strong customer influence on the priorities and standards of the RA is becoming a basic value in Governance in some countries with a mature network.
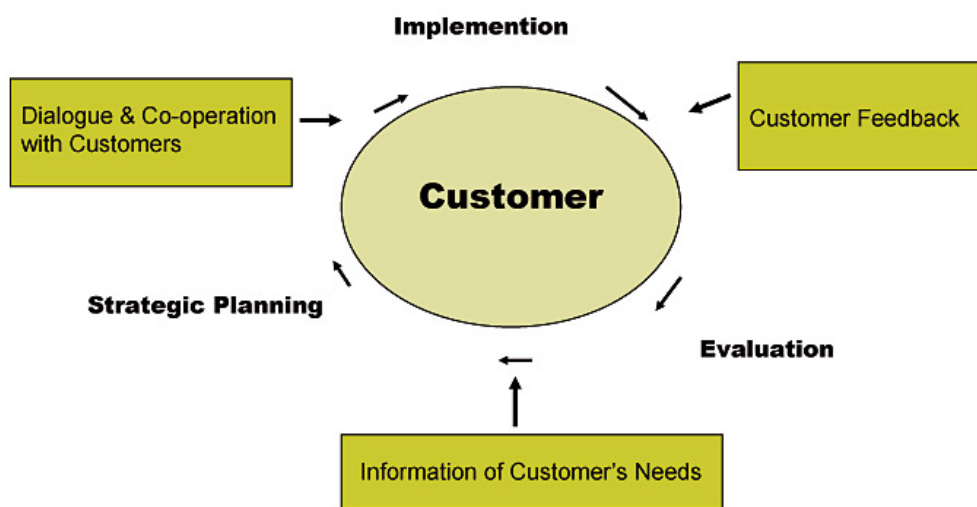
Figure 2 – The new inputs from customers unite with the traditional lifecycle of road management.

Managing RAs with customer influences is described as a good practice for mature road networks. Here, the government and its administrations decide in general and on a strategic level where as the customers involved decide on the level where they have the very best knowledge and for their own good.

The influence of customers on administration on an operational and at a strategic level gives the administration deeper understanding of how needs and problems are composed which enables the authorities to efficiently utilise their limited resources, and to develop a better targeted solution. It also gives customers more realistic views on what to expect from authorities. The follow on is that in order to maintain high levels of customer involvement, RA must in turn provide feedback as to how they took account of user views in their decision-making. The report of the Technical Committee goes into this in much more detail.

2.4.　　Other special factors acting on organisation and structure

The Committee identified three other important factors that affect good practice for governance organisation & structure:

- the state of development of a road network;
- the extent of procurement;
- external funding;

Two are to be influenced by the parent Ministry and or the RA, notably: the extent of procurement and the type of external funding.

State of development of the network
The first aspect can be seen as the Context in which the parent Ministry and the RAs operate; namely: the state of development of the network. Again, for each of these factors, do's and don'ts in governance organisation & structure were identified and good practices will be described in the Technical Report. The Committee distinguished three stages of development of the network: growing, upgrading and maturing [3] that relates to the country's socio-technological environment.

A *growing* network has a pioneer socio-technological environment: roads are being extended, new groups of users get access to the infrastructure and the RA must be involved both with building new roads and following up creating the organisation to maintain and operate the new infrastructure. The effects of these activities will have large economic impacts for users and regions, which may be accommodated through transparency, use of Road Boards representing interest groups and economic effects as major objectives and information objects.

In an *upgrading* situation the basic infrastructure with a certain capacity is there, but the government invests massively in improving the network. This requires a project state of mind with a fitting governance infrastructure including limited government interference with construction work-in-progress.

In a *maturing* situation the infrastructure as such is seen as sufficient, and the attention focuses on recurring activities as maintenance and operation. An example of the effect of the development state of the network is that in a maturing network outsourcing to private parties and granting influence to users is more suitable than in other states of development, because there is a stable base situation. The Committee recognised that even in a mature state the network still needs improvements to cope with new user demands. These improvements, like the use of user charging and intelligent transport systems, need project-based governance and can be seen as capital investments.

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[3]　　Cox, 2001; In fact Cox distinguished in his model also a Birth phase, but the Committee was unable to derive good practices of this phase

Extent of procurement and outsourcing

The extent of private sector involvement influences governance organisation & structure mainly at the level of the parent ministry, but also of the RA. For instance, when road management or maintenance is outsourced to the private sector for a period of years, careful arrangements must be made in order to deal with changes in objectives and expected performance in case of public policy changes or changes in user needs. However, when such services are performed by the RA or procured for the year, no special attention is needed for flexibility issues.

External funding

The type of external funding, for instance from the State annual Budget or from external funding organisations, is part of the architecture as seen both from the parent Ministry and from the RA. Such governance characteristics as the degrees of freedom in spending money and reacting to changes in road user requirements, the flexibility of both timing and amount of the funds available, the period over which funding is fixed and the basics of reporting requirements all depend on the type of funding of the activities of the RA. The funding decision therefore is an important co-determinant of the potential for positive and negative performance effects of the governance architecture.

3. HUMAN RESOURCES

This section of the report addresses the Strategies and Outputs of the Terms of Reference detailed in Table 2 below. Furthermore the good practices identified by the Committee, in the majority of cases, are already used successfully by RAs around the world.

Table 2 – Terms of Reference Relevant to Human Resources

Issue 1.3.2 Development of Human Resource Skills	
STRATEGIES	OUTPUTS
Investigate what are the competencies necessary to face the future challenges, identify what should be changed and/or introduced in education curriculum	Recommendations
Identify new ideas, innovative methods introduced in the field of education and training in road and road transport (within the different contexts of developed and developing countries)	Best Practises

The Terms of reference has a particular emphasis on competencies and how to address the educational and training requirements. There are many ways RAs can obtain the competencies needed to operate successfully. However, whatever approach is taken, the overarching goal must be to have the "Right" people (number, skills, attitudes and values), at the "Right" time and place, whether internally or externally.

3.1.   Competences

For RAs to decide what approach to take in acquiring competencies and to determine what is "Right" for them is up to them to decide. However, it should be based on what the RA is trying to achieve strategically in the long term and the availability of required competencies both now and in the future. Identification of the competencies required, needs RAs to consider a number of issues. These include by way of example, the issues identified in section 2.3 and 2.4 above:

- customer or user influence
- the state of development of a road network;
- the extent of procurement or outsourcing;
- external funding; and

Each issue will be addressed in turn.

Customer or user influence
The RA must maintain effective engagement with customers and users. Delivering good service to the public is becoming increasingly essential to RAs. As a result, competencies that include communication, marketing, consultation and an ability to interact and relate to customers and users become more important.

In a RA with a reasonable level outsourcing the prime/first customer contact with the RA may be through its suppliers. As such, there is just as much interest in the delivery of the service as how its delivery is perceived by the customer. Therefore, suppliers must exhibit the same values as the RA for efficient service delivery under an outsourced model. Related to this, there is also the need for employees to have the competencies needed to establishment and maintain of good relationships and partnerships with suppliers so that the values of the RA become instilled across the whole of its supply chain. (Value chain)
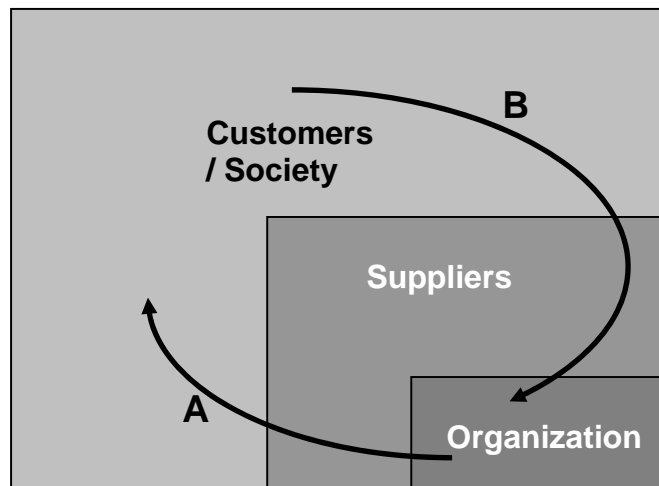

Figure 3– The role and the influence the Road Administration has on its environment (suppliers and customers) and vice versa

The state of development or maturity of a road network
Typically in an RA with an immature network, competencies would be more planning and engineering oriented. Whereas in an RA with a mature network, greater emphasis may be placed on Traffic Management, Communications, and Environmental Management etc.

The extent of procurement or outsourcing
Typically in an "own forces" RA, all the traditional RA competencies would be present, with a greater emphasis on Human Resource and Management related competencies, because of the greater number of staff. Whereas in an outsourced RA, greater emphasis may be placed on output/outcome specification, procurement, contract management and legal competencies. A continuous debate occurs regarding what competences and skills and to what extent and level, are necessary to be kept inside the organization in order to act as a professional client.

External funding

As a RA receives a greater percentage of its funding from non governmental allocations, e.g. dedicated funding through a hypothecated fund and or private/debt funding, there is likely to be a greater demand for finance, accounting, public relations, legal, treasury and debt management competencies.

As stated earlier, there are other dimensions that could also be considered, that are embodied in the thinking supporting the Committee's framework and earlier PIARC models[4]. Also as a RA moves along the continuums contained in the four issues and models referred to above, there is likely to be significant increases in demand for supporting Information Systems capability, capacity and competence.

Surveys undertaken by the Committee have identified that RAs are currently facing skill and competency shortages in various competences. However, of particular note is the shortage in core technical/bridge/road building engineering competencies.

The Committee has identified that the majority of RAs are facing an increasingly complex Human Resources situation. Addressing competency shortages is not just a matter of recruitment. In addition to the competency shortages identified above, the Committee has also identified a forthcoming workforce imbalance with:

- An ageing work force;
- Inadequate numbers of graduates being educated by universities;
- Low levels of enrolments in university courses;
- Increasing competition from other professionals for bright young people; and
- A negative perception of the Engineering profession and RAs.

If the above supply issues weren't enough, the Committee has also identified a lack of flexibility within the rules governing many Road Administrations. These include:

- RAs increasingly being required to reduce staff numbers; and
- Constraints over the ability to match private sector remuneration in both amount and elements it contains.

The Committee has taken these issues and through the means of questionnaire firstly confirmed that these issues are real and secondly identified the differing techniques and approaches adopted by Road Agencies to address them. Two such approaches include:

- promoting the profession to young people by various means; and
- supporting and collaborating with Universities and other learning institutions to ensure that they are adequately resourced and Curricula is relevant and up to date.

These approaches will be reported in greater detail in the Committee's technical report.

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4   PIARC C15, Cox and Talvitie

3.2.   New and existing staff

The Committee has also confirmed the importance of:
- effective recruitment;
- retention existing staff; and
- maximising the real productivity of existing staff,

to an RA having the ability to effectively discharge its responsibilities.

Recruitment

RAs face the situation of being forced to recruit in a very competitive market. As a result RAs must become increasingly innovative in promoting their organisation to potential recruits. They must identify positive points of difference between themselves and their competitors. The surveys and seminars undertaken by the Committee identified many ideas, including for example, better conditions of work, holidays and the opportunity to shape the way in which their country develops.

Retention

Retention of existing staff in many ways is even more important than recruitment. The basis for this assertion is that for existing staff, they are already familiar with your organisation's policies, values and procedures, have experience in the work of the organisation, typically have been the recipient of significant investments in training etc. In other words they are fully productive employees. New employees, while they may be recruited to bring in new skills and/or attitudes, typically require many months to become fully productive. On top of this, depending on the methods of recruitment used, is the actual time and cost of recruitment.

Again the Committee identified many ideas to assist in this area, including for example, paying premiums to retain employees past 60, early identification and action to address staff issues and concerns, maintaining good working relationships with employee unions.

Maximising the productivity of existing staff

It is not only sufficient to have the right numbers of employees within a RA, but they must be skilled, properly motivated and effectively lead.

The most important dimension is effective leadership, with the necessity for clear identification, promotion and understanding of the RA's strategic direction. This applies not only to senior management, but also to all employees within the RA. Failure to do so risks wasted effort. Meaningful objective setting, supported by effective performance management systems with linkages to performance rewards is one means of maximising staff productivity. There are many more. However, even under the heading of rewards there are a broad range options. These options can range from:
- recognition by senior management (either publicly or privately); to
- additional opportunities for advancement and training; to
- the opportunity for more challenging, varied and interesting work; to
- something that is more monetary in nature.

The overall issues related to the importance of embedding the organisations culture and values to support high quality decision-making, fair practice and achievement of organisational outcomes.

The importance of achieving the above outcomes rests on creating and maintaining a high level of employee engagement, alignment and teamwork throughout the organisation using management and HR processes.

The ideas identified by the Committee will be reported in greater detail in its Technical Report.

4. PERFORMANCE INDICATORS

This part of the Committee's reporting describes the way in which the Committee has addressed the terms of reference given to it. The terms of reference for performance indicators are stated in table 3.

Table 3 – Terms of Reference Relevant to Application of performance indicators

Issue 1.3.3	
Application of performance indicators of the road system	
STRATEGIES	OUTPUTS
Investigate the performance indicators which are actually implemented by road administrations and how these indicators are obtained and used	Best practices to improve the transparency and efficiency of administration through the application of performance indicators
Investigate policy evaluation based on performance indicators in accordance with a country's socioeconomic development level: • how indicators match daily needs • means for data management • assess the level of achievement	Best practices for policy evaluation and the application of the results for integration into new projects

The Committee has added an extra output: the categorisation of the performance indicators that are actually used based on a good practice conceptual framework.

It has proven unpractical to specify a set of best practice Performance Indicators for a RA purely on the basis of the state of maturity of its road network as stated in the terms of reference. Whilst the maturity of the network can be a useful broad indicator of the role of a RA it is postulated that the governance architecture should represent the products and services required of the RA. These products and services can be varied and do not necessarily strictly conform to a particular state of maturity of the network.

It should be realised that there is a vast body of knowledge already published on different aspects of using Performance Indicators. We encourage readers to tap into this resource by using the linkages in the reference list of the final report.

This part of the Committee's reporting will be composed of two main elements:
1. A practical selection guide for actual Performance Indicators, with the use of a decision tree
2. Good practices for the use of performance indicators and the decision tree

The next two paragraphs will elaborate on these items.

The Technical Report will also identify gaps in knowledge and practice and suggest future directions that PIARC may choose to pursue to support countries in developing their practice.

4.1. Selecting appropriate performance indicators

In transportation, as in other sectors of government, performance-based planning and management is becoming standard practice.

The *guide* will provide help to RAs in the selection and development of performance indicators, both for a performance management regime and for other purposes, including budget decisions on capital investments and keeping road users informed on the effectiveness of road policies. The Committee has concluded that different RAs with different activities and in different circumstances will use different types of performance indicators to monitor and manage road infrastructure management. Thus, different good practices are applicable for each.

Based on the questionnaire data, expert input of Committee members and already available data outside the Committee, a *decision tree* will be presented that should lead users of performance indicators to a set of suggested performance indicators that represent international good practice. The decision tree is based on the framework of the Committee (see section 1) and the identified good practice for the use of different types of performance indicators. It leads to specific types of indicators that are useful for a particular purpose and a particular RA, with examples of actual indicators used by similar RAs.

A set of performance indicators developed with the assistance of the decision tree, will relate to two basic purposes:
1. use of performance indicators to inform the dealings with outside bodies for the planning and decision making process, e.g. for informing the ministry on the achievement on outcomes required, or for parliamentary budget decisions, or for communication with road users.
2. use of performance indicators to facilitate performance monitoring and management in the implementation of road management activities such as construction, reconstruction, maintenance and operations for internal efficiency reasons.

Dealings with outside bodies and deciding on capital investments
Performance indicators play an important role in the communication between a road administration and its stakeholders. They play an evaluating role in setting policies, in determining the output requirements for the RA and in reporting actual output and its effects on the policy objectives.

Furthermore, at the highest level, performance agreements between ministries and RAs are increasingly used to define expectations for investments. Performance indicators and attendant policy goals are also applied by international non-governmental organizations, who influence or finance road sector activities. Among these are the United Nations, the World Bank, the European Union, and other regional funding entities.

Road Administrations delivering services through procurement should use procurement contracts to ensure accountability for outputs. Performance agreements or contracts would be expected to include quantitative performance indicators.

Implementation

For the implementation of the selected policies, investment programmes and for service level delivery, performance indicators can and do play an important role in planning and control as well. Here, it is again important to select the right performance indicators, and following the Committee's framework, will largely depends on context and strategy of the RA.

Contextual variables that the working group identified are integrated in the decision tree and the good practices. These variables are:

- The varying environment and governance structure of RAs, and the strategic focus and desired outcomes of the RA and stakeholders;
- The type of Products and Services for which each RA is responsible: Strategic Planning and Policy-making, Service Level Delivery, and/or Capital Investment Impulses;
- Countries' state of road network development: Developing, Upgrading or Maturing
- The way the Road Administration actually delivers its products, on its own or through procurement or outsourcing.

Focus of the RA

One of the factors that determine the use of performance indicators by the RA is its role. It makes quite a difference if the RA simply delivers the products and services as requested by a department of a Ministry, or that it defines the products and services that private parties must deliver.

Products and services

Performance and the types of activities performed by the RA appear to be important factors influencing good practice use of performance indicators. For this reason this technical report and the report on organisation and structure will pay much attention to good practices for the three types of activities that were already described in section 2, policy & planning, capital investments (construction) and service level delivery.

State of Road Development

It further deals with management approaches for effective use of performance indicators and with the identification of performance indicators used by networks in different stages of development.

Procurement and outsourcing

When activities are outsourced or procured, it is important to use performance indicators to make sure that the properties of the product that will be delivered are defined precisely, that their realisation can be measured and that the compensation if the contracted outputs are not realised is part of the contract.

4.2. Use of performance indicators

The decision tree and its guide help select performance indicators. However, before and after using the decision tree the Committee identified important good practices for using performance indicators in itself. These are described in the second part of this section of the report.

Good practices before using the decision tree

Before using the decision tree the RA or its stakeholders must have a clear view of the purpose for which they will use performance indicators. The Committee identified several good practices in this area, a kind of Performance Indicators Framework, which fits in the Committee's framework. This framework for instance includes the good practice to use performance indicators both in infrastructure plans for the network and strategic plans for the RA.

The framework identifies the factors that determine good practice in the use of performance indicators, e.g. for performance management. The controllability of all the factors influencing the outcomes required by a ministry, for example, will determine whether a RA should be focusing on output or outcome performance indicators. For example, if the RA has complete control over all the factors that would imply a particular outcome required, then it is good practice for the administration to seek to identify outcome type indicators; if not then it should limit the scope of measurement to output type indicators. In practice this may not always be the case. Furthermore, the RA should always make sure that for firm commitments controllable performance indicators are selected.

Performance indicators should further be systematic, consistent series of data describing the outcomes, outputs or quality of service resulting from transportation activities. Indicator results and analysis are reported to stakeholders and managers regularly at appropriate intervals. They may be used strictly for monitoring, or to manage to goals established in strategic or operational plans. They can be used as raw data, as means for specifying agreements, and as the carriers of performance-based incentive systems. The Committee recommends unambiguous and agreed upon usage for each set of indicators in order to ensure appropriate and effective usage without misunderstandings between involved parties, outside or inside the RA.

The good practices will be represented by the use of performance indicators amongst member countries and their function, and by some general good practices regarding the way performance indicators should be employed.

Suggestions for further development will be made, e.g. the use of management systems, i.e. more widely use of physical planning tools (physical data) supplemented with performance budgeting systems (financial information), or management information systems for setting priorities and monitoring performance, commonly recommended by funding institutions or donors like the World Bank; and setting up adequate infrastructure financing arrangements as a prerequisite for sound road management planning.

The performance indicator section of the report thus first helps gaining insight in the complexity of running a RA and the potential usefulness of performance indicators in that context. The decision tree and its guide next aim to reduce the complexity by asking some simple questions leading to a selection of good practice performance indicators for specific purposes.

Good practices after using the decision tree
Finally, the Committee warns against a mechanical use of the decision tree. Having used the decision tree and reached a selection of performance indicators, some so-called sanity checks are in order. The Committee identified two types of these sanity checks:
- alignment checks
- efficiency checks

The alignment checks take the full context of the RA into account, its objectives, the priorities of road users, the interest of the government and the scope of procurement contracts. All of these should show a certain measure of alignment.

When activities are being outsourced, the alignment of performance management indicators of the RA and of the private parties is for instance an important issue.

Efficiency checks try to limit the administrative burden and counter-productive use of performance indicators. It is for instance not necessary to have a performance indicator for each objective, proxy indicators can be used that cover multiple objectives. Furthermore, external funding agencies and the government often require the RA to deliver pre-defined performance indicators. In that case, it can be effective to use these same PI's for other purposes, such as in the governance architecture for the RA or in its reports to outside parties. After these checks the performance indicators can be used.

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DRAFT CONCLUSIONS

1. Integrity is first base in good governance in all economies
If Integrity is not assured, RA performance will always be endangered. Given the large sums involved and the long worldwide history of collusion and corruption in the Road Sector therefore, awareness of the integrity issue and measures to guard integrity always should remain a major element of the governance architecture of RAs all over the world. The negative impact on road organisations, economy and democracy cannot be underestimated.

2. The governance of a Road Administration should be tailor-made for their assigned responsibilities and circumstances
The performance of RAs depends on a fit between its governance architecture and the environment within which it operates. It is a main finding that to enhance RA performance, its governance and structure, the use of human resources and the use of performance indicators should be tailored to the main activities that the RA performs and does not perform.. .

Three categories of activities typically executed by RAs requiring different governance architecture:
- strategic planning & policy making;
- capital investment, that is the (re) construction and upgrading of roads, and;
- service level delivery, mainly consisting of maintenance and operations.

3. Stronger customer/user influence is an efficient management tool
A strong customer influence on the priorities and standards of the RA is becoming a basic value in Governance in the Scandinavian countries.

Managing RAs with customer influences is described as a good practice for mature road networks. Here, the government and its administrations decide in general and on a strategic level and the customers involved decide on the level where they have the very best knowledge and for their own good.

The influence of customers on administration on an operational and at a strategic level gives the administration deeper understanding of how needs and problems are composed which enables the authorities to efficiently utilise their limited resources. It also gives customers more realistic views on what to expect from authorities.

4. Road Administrations should focus on interfaces in the value chain and its own position therein
This comprises for instance the relation between a RA, road users, private contractors and other road network managers.

It starts with a clear understanding of its role and responsibilities (tasks) within the chain, translated into governance design and organisation structures.

Suppliers must exhibit the same values as RA's for efficient service delivery under an outsourced model.

As a consequence staff skills should be oriented not only on the ability to perform internal tasks, but even more on managing relationships and partnerships within the value chain. The RA should be a professional procurer, contractor as well as a professional supervisor.

This also extends to the usage of performance indicators, performance monitoring and measurement. Alignment of performance management systems in the value chain is crucial for creating the needed public value and the sustainability of authority to act as a RA

5. An imbalanced, aging workforce is a major threat for the continued successful operations of Road Administrations
Based on survey responses, 30 to 40% of RA staff is 50+. As these employees move to retirement, much of their experience and knowledge will be lost to the RA if adequate measures are not taken.

6. An innovative, coordinated approach for engaging young people has to be found in order to attract them to engineering profession particularly to the road sector
Surveys have identified low levels of enrolments in university engineering courses resulting in an inadequate number of graduates to replace the aging workforce. Further there is increasing competition from other professionals for bright young people.

7. Effective strategies for the recruitment and retention of staff, as well as maximising their productivity are the core Human Resource Management elements needed for the continued successful operation of Road Administrations
Experiences shared at workshops indicated that the majority of HR departments in RAs were looking at holistic methods of managing the somewhat complex challenges related to Human Capital management. Engagement of employees from initial recruitment and throughout the various stages of the employment cycle needed to be actively and proactively managed in order to ensure that the organisation maintains the capability to achieve its present and future goals.

8. Supervisors, clients, partners, contractors and the Road Administration should have a clear understanding of the way certain sets of performance indicators will be used.
Performance indicators can be used in many different ways, e.g. as a strategic evaluation tool, an incentive based system or as raw data. Indicators have a best fit for one or more purposes, depending on the position of the RA in the value chain. Deviation or ambiguity of these purposes and agreements on indicator usage, can lead to misunderstanding or even a breach of trust between the parties involved.

9. The definition and usage of performance indicators should be aligned with the different purposes being served
Outcome performance indicators aligned with the objectives of government and road users should be related to appropriate activities of the RA, particularly, but not only when the RA has control over the entire outcome. Output performance indicators for performance management of the delivery of road management products and services are appropriate, particularly when the RA is contributing only partly to a desired outcome. The performance indicators used and reported by the RA should reflect its position in this field, e.g. outcome indicators for a strategic RA and output indicators for a RA that focuses on delivery.

10. In using performance indicators, efficiency should be a factor.
As for all governance instruments, the administrative burden of performance indicators should always be kept in mind. Therefore, before introducing new performance indicators sanity checks should be performed to check whether the information is already (almost) available or can be included in an existing indicator.