

CUSTOMER EXPERIENCE

MEASURING CUSTOMER EXPERIENCE AND PUBLIC VALUE CREATION FOR TRANSPORT ADMINISTRATIONS A PIARC TECHNICAL REPORT

TECHNICAL COMMITTEE 1.1 *PERFORMANCE OF TRANSPORT ADMINISTRATIONS*



STATEMENTS

The World Road Association (PIARC) is a nonprofit organization established in 1909 to improve international co-operation and to foster progress in the field of roads and road transport.

The study that is the subject of this report was defined in the PIARC Strategic Plan 2020–2023 and approved by the Council of the World Road Association, whose members are representatives of the member national governments. The members of the Technical Committee responsible for this report were nominated by the member national governments for their special competences.

Any opinions, findings, conclusions and recommendations expressed in this publication are those of the authors and do not necessarily reflect the views of their parent organizations or agencies.

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International Standard Book Number: 978-2-84060-748-9

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A PIARC TECHNICAL REPORT

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The Technical Committee was chaired by Mr. Christos S. XENOPHONTOS (USA), Mr Alan Colegate (Australia), Jose Manuel BLANCO SEGARRA (Spain) and Joseph AHISSOU (Benin) were respectively the English, Spanish and French speaking Secretaries.



EXECUTIVE SUMMARY

2023R06EN

MEASURING CUSTOMER EXPERIENCE AND PUBLIC VALUE CREATION

A PIARC TECHNICAL REPORT

The World Road Association (PIARC) tasked Technical Committee 1.1 Working Group 1 to explore the performance of road and transport administrations focusing on the customer facing levels of service underpinning asset management, models and frameworks in use, how we capture creation of public value and understanding decisions and practices around communicating, engaging and activating the community.

Research continues to show that when public agencies offer a better customer experience, they deliver measurable impacts across multiple priorities. Implementation of Performance Management is at various degrees of adoption throughout the world. Some countries have been working on this issue for some time and continue to advance the implementation of Performance Management including the codification of infrastructure related performance measures in law. At the same time, other countries or some jurisdictional levels within them, are still lagging in the implementation of an even basic framework of organizational and performance management.

This report focusses its research on what approaches are currently happening across the world in respect of delivering an improved experience for all our customers and stakeholders. It is acknowledged that in many industries, the term “user” designates a person who uses a product or service and the term “customer” refers to a person that purchases or pays for a product or service. Throughout the development of this report and in reviewing the submitted information we noticed that different administrations tend to use the terms interchangeably. For the purposes of this report, the concept of “stakeholder” and “user” are therefore included in the definition of “customer”.

The Working Group’s approach to addressing the strategic issue was to look at three components bringing to account an understanding and exploration around public value and value creation, customer levels of service in the contexts of Asset Management, along with considering future directions in frameworks and measures through a combination of case studies, surveys and literature reviews from around the world.

One of the Group’s first tasks, was to research and agree on a definition for Customer Experience in the context of this report, adopting the following definition:

“The sum of all interactions in the journey between a customer and an organization in the delivery of a service.”

The research explored the individual relationships between asset management, value creation and frameworks and measures in the pursuit of improving our customer's experience and found that there is no one single approach. The results show that we are all continuing to develop our understanding and to identify the correct methods and tools to ensure that we start to comprehend what our customers are seeking.

Following a review of 16 case studies from a range of road and transport organizations, we found that when it comes to strategic commitment to customers, there was no one single response or approach, however, all respondents identified either a strategic commitment or legislative requirement to customers and the communities they serve. Similarly, whilst there was no one single approach in identifying or categorising customers other than the consistent message was that the community is our customer.

When it came to measurement approaches, organisations tend to follow one of two broad methods for determining customer satisfaction. It was evident that whilst the results are reflective of community sentiment, they are not necessarily reflective of the entire customer journey in respect of the various services offered by road and transport agencies. On that basis it could be argued that leadership teams and management are not necessarily getting the full picture in respect of customer experience. This does not diminish the value of the information that is being collected but it does reflect the difference that we may need to consider when looking at the services we provide to the community and citizens as compared to the services that we offer and provide to customer and stakeholder groups. In all cases organisations reported that there was an external avenue for escalation with most referring to the Ombudsman or local equivalent office.

The results from the Asset Management survey showed a correlation between the type of network managed and the extent to which customer experience is used to influence decision making. It is acknowledged that not all aspects of road network performance are relevant to customers and the focus is more on how services are offered and their attributes rather than how they are managed. The chapter on Asset Management brings together the findings from a literature review and survey of more than 37 organisations from 17 countries.

Whilst all organisations participating in the survey indicated that they did have decision support systems in place, they were not necessarily based on capturing community needs and expectations as part of the prioritisation and decision-making process. It was agreed by the Working Group that, **without having a good understanding of customer needs and expectations road agencies face significant risks in meeting customers desired and expected Levels of Service.** These risks can include providing services and assets in the wrong place, overlooking genuine community needs, no clear understanding of priorities for investment, low levels of customer satisfaction and spending more on programs than is necessary. In many cases the Customer or Community perception survey instrument is used as the basis of providing input into the Asset Management decision making tools.

Public value creation has been explored for several years and continues to evolve as the focus moves from operational and tactical outcomes to more holistic and integrated thinking. The research found that improved customer experience fits easily in a wider model of public value creation because the value element of customer experience considers delivery of future focused long term value creation. Many transport agencies are expanding this view, working to ensure their efforts provide a net positive to communities and society. This report has progressed further the concepts from the previous cycle mapping related objectives, strategies, and outcomes measures against capitals consumed in the creation of public value.

The culmination of the research resulted in identifying six key elements that road and transport agencies can use to assess their progress on the customer experience journey.

The six elements are defined as:

- **Culture** – Describing the behavior, considerations and strategic direction towards customers and their experience in receiving services from a road and transport agency
- **Leadership** – Approach taken by the leadership at all levels in the organization in making customer experience an integral part of decision making and thinking
- **Process** – The processes, procedures and policies that support and guide delivery of a good customer experience
- **Insights** – Understanding how the organization manages and responds to information that is gathered and how it's used
- **Value** – Consideration of delivery of future focused long term value creation for customers, suppliers and employees
- **Improve** – Consistent methods of improvement are in place to respond to changing needs and meet new challenges.

The elements are supported by practices that describe its most important aspects. There is some overlap however this reflects the multi-faceted and multi-disciplinary approach that is necessary in providing excellent customer experience. The intent of the framework is to provide a mechanism to be able to assess internal business processes, culture and practices. It is intended that a review of this nature be considered as a health check on how well placed an organization is to address current and future customer experience challenges and opportunities.

In a recent article EY Australia Partner Kay Hillman commented on the important distinction between customer and citizen in the context of delivery of public services. She made the point that *"The customer chooses to do business with you, but a citizen is relying on government for many things that government is there to deliver for us."*¹ We need to look carefully at what that means from an individual perspective and the experiences they have as they go along their customer journey in accessing the services we provide as road and transport agencies. We serve both customers and citizens and most often in the context of being the only service provider in the marketplace.

¹ Extract from an online article [Citizens, customers and service transformation \(themandarin.com.au\)](https://www.themandarin.com.au/citizens-customers-and-service-transformation) EY Australia Partner Kay Hillman accessed 19 April 2022

This is something that will have to be considered as new thinking and approaches are developed around our understanding of how road and transport administrations are measuring the efficiency and effectiveness of Customer Experience and Public Value Creation not just for the community in general but for individuals as well.

Building on the findings and conclusions from this work, several recommendations are presented in the final chapter of this report. These include recommendations for transport agencies as well as to PIARC for future work in the customer experience and public value creation space. One of the most important recommendations for transport agencies is to consider broadening their focus from an operation focuses mission statement to a holistic societal value focus. For PIARC future work, a highlight is to examine changes in technology and customer experience, to identify what changes in technology mean for the transport users customer experience and public value creation.

CONTENTS

1. INTRODUCTION	3
1.1. HOW DO WE DEFINE CUSTOMER EXPERIENCE?	3
1.2. WHO IS A CUSTOMER?	5
2. CONTEXT AND APPROACH.....	6
2.1. SCOPE OF WORK	7
2.2. METHODOLOGY AND APPROACH	8
2.3. STRUCTURE OF THE REPORT	9
2.4. OUTPUTS OF THE TECHNICAL COMMITTEE	9
3. CUSTOMER EXPERIENCE	10
3.1. COMMITMENT TO CUSTOMERS AND THEIR EXPERIENCE.....	10
3.2. CATEGORIZING CUSTOMER GROUPS	11
3.3. DRIVERS AND INFLUENCES	11
3.4. MEASURING CUSTOMER EXPERIENCE	12
3.5. CUSTOMER COMPLAINTS	13
3.6. CONCLUSION.....	14
4. ASSET MANAGEMENT	15
4.1. CUSTOMER EXPERIENCE IN ASSET MANAGEMENT – LITERATURE REVIEW	15
4.2. CORRELATION BETWEEN CUSTOMER EXPERIENCE AND ASSET MANAGEMENT	20
4.3. SURVEY METHODS ADOPTED.....	22
4.4. RESULTS EVALUATION AND USE	23
4.5. WHAT IF YOU DON'T SURVEY YOUR CUSTOMERS?	24
4.6. CONCLUSION.....	25
5. PUBLIC VALUE	26
5.1. RECAP OF RELEVANT WORK FROM PREVIOUS PIARC WORK	26
5.2. RELATED PUBLIC VALUE PRACTICES IN TRANSPORTATION.....	27
5.3. SUMMARY OF RECENT LITERATURE	32
5.4. POTENTIAL PUBLIC VALUE MODEL FOR A TRANSPORT AGENCY	35
5.5. CONCLUSION.....	36

- 6. SIX ELEMENTS OF CUSTOMER EXPERIENCE 38
 - 6.1. THE FRAMEWORK 38
 - 6.2. INTRODUCING THE SIX ELEMENTS 38
 - 6.3. APPLYING THE FRAMEWORK TO DRIVE IMPROVEMENT 40
 - 6.4. ASSESSING MATURITY AGAINST THE FRAMEWORK 41
- 7. CUSTOMER EXPERIENCE ASSESSMENT TOOL 43
 - 7.1. STEP 1 – ASSESSMENT 43
 - 7.2. STEP 2 – ANALYSIS 49
 - 7.3. STEP 3 – REPORT 49
- 8. CONCLUSIONS AND RECOMMENDATIONS 51
 - 8.1. THIS STUDY 51
 - 8.2. OVERALL CONCLUSIONS 51
 - 8.3. RECOMMENDATIONS FOR TRANSPORT AGENCIES..... 52
 - 8.4. RECOMMENDATIONS TO PIARC FOR FUTURE WORK 53
 - 8.5. FINAL REMARKS 54
- 9. GLOSSARY 55
- 10. CONTRIBUTORS..... 56

1. INTRODUCTION

Implementation of Performance Management is at various degrees of adoption throughout the world. Some countries have been working on this issue for some time and continue to advance the implementation of Performance Management including the codification of infrastructure related performance measures in law. At the same time, other countries are still lagging in the implementation of an even basic framework of organizational and performance management.

The Technical Committee A.1 – Performance of Transport Administrations (Strategic Planning Cycle 2016-2019) and its predecessors have done quite a bit of work on the identification of good practices and guidelines for performance frameworks and indicators for the road sector. These earlier reports and findings can be found on the [PIARC website](#).

Research continues to show that when public agencies offer a better customer experience, they deliver measurable impacts across multiple priorities. To that end this report focusses its research on what approaches are currently happening across the world in respect of delivering an improved experience for all our customers and stakeholders.

The goal is to understand the varying level of maturity in customer insights and how that information drives outcomes within an organization. In addition, this report will seek to demonstrate how these insights are communicated to interested stakeholders and the community.

1.1. HOW DO WE DEFINE CUSTOMER EXPERIENCE?

The expectations around Customer Experience continue to grow and evolve and “in the minds of customers there is a clear link from customer experience to trust and confidence in the government in respect to the delivery of services; poor customer experience translates to low trust and improving customer experience translates to increasing trust ².

It is acknowledged that in industries, the term “user” designates a person who uses a product or service and the term “customer” refers to a person that purchases or pays for a product or service. Throughout the development of this report and in reviewing the submitted information we noticed that different administrations tend to use the terms interchangeably.

Therefore, in the case of public agencies, such as Transport Administrations, one can take the general view that the person is paying for the services directly (tolls) or indirectly (fuel taxes, registration fees, etc.) and therefore they can be seen as a “customer” that we have an obligation to ensure they get value for money. For the purposes of this report, the concept of “stakeholder” and “user” are therefore included in the definition of “customer”.

² BCG and Salesforce (Feb 2020) – The Trust Imperative “Why Customer experience in government matters” page 4

Customers often use the quality of customer experience as a representation for measuring customer performance and an organization's ability to provide essential services. This report will explore the implications of creating an improved experience for all our customers and stakeholders.

In doing so it will bring to account an understanding and exploration around public value and value creation; customer levels of service in the contexts of Asset Management along with future directions in frameworks and measures that are explored further in this report through case studies from around the world.

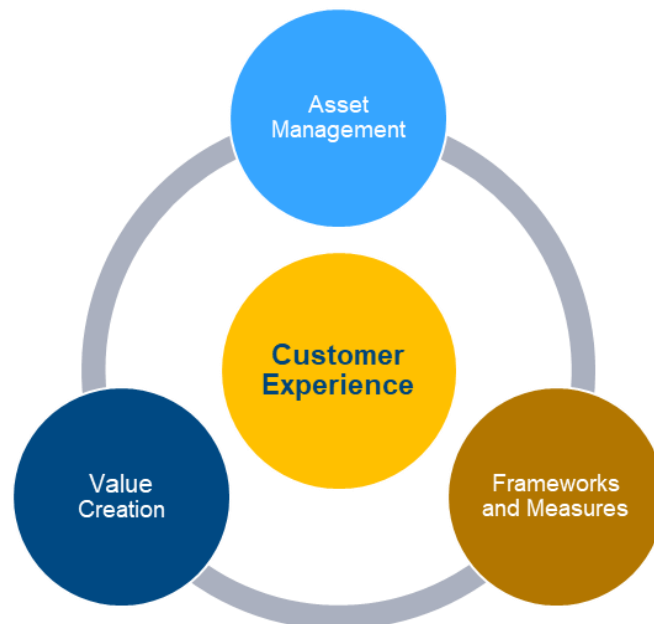


Figure 1 - Interaction to improved customer experience

The following diagram helps to describe the ongoing interaction between customer experience and trust in transport agencies to deliver a high-level service. The relationship between customer experience and public value creation will be explored further in the report.

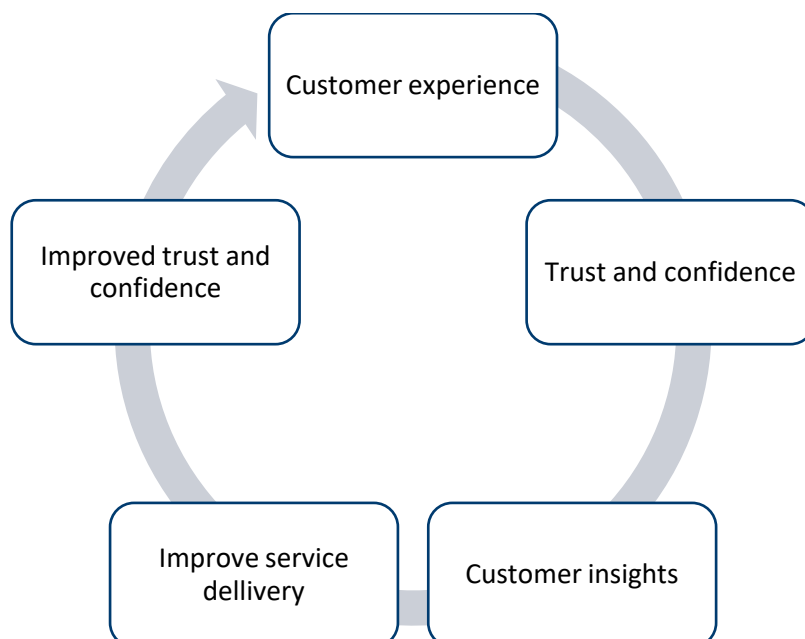


Figure 2 - Customer experience and trust cycle

Whilst there are many definitions to describe Customer Experience for the purposes of this report it has been defined as:

“The sum of all interactions in the journey between a customer and an ORGANIZATION in the delivery of a service”

1.1.1. Differentiating Customer experience and customer management

It is worth noting that Customer Experience is different than Customer Relationship Management. Customer Relationship Management (CRM) is usually focused on capturing what a company knows about a particular customer whereas customer experience data capture our customers' subjective thoughts about our organization. CRM tracks customer actions after the fact whereas customer experience captures the immediate response of the customer to its encounters with the organization.

Customer experience management and customer relationship management differ in their subject matter, timing, monitoring, audience, and purpose and this report is focused on what is being done to understand customer experience management in road and transport agencies. As said by TC 1.1 in [2016R22EN “Guide to Good Practice Performance Frameworks”](#), “There is no correct answer on what should be measured by any road authority”. Furthermore, the Australian Commission on the Measurement of Economic Performance and Social Progress said that “what we measure shapes what we collectively strive to pursue and what we pursue determines what we measure”. So, we can stand that measuring any aspect of customer experience shapes what the road and transport organization strives to pursue”.

1.2. WHO IS A CUSTOMER?

Organizations form relationships with many people and for the purposes of this report it has been agreed to specifically adopt definitions for Customers, Stakeholders and Community.

The following definitions have been developed by consolidating the thoughts, opinions and experiences of the members of the Technical Committee underpinned by the findings from the Case Studies referenced later in this report.

These are many terms used to define the people road and transport administrations have relationships with and even within those definitions many organizations undertake further segmentation to aid in defining and mapping a customer's journey and associated experiences.

For the purposes of this report the following definitions have been adopted for consistency:

Community - anyone who lives in your jurisdiction or area of responsibility

Customer - anyone who uses or relies on road and transport service

Stakeholders - are either interested or impacted by a project or initiative that is being undertaken on the transport network.



Figure 3 - Relationship segmentation

2. CONTEXT AND APPROACH

The PIARC 2020-2023 Strategic Plan identifies that the external operating context related to road infrastructure and road transport is constantly evolving in response to large social, economic, and environmental shifts. This affects the delivery of services to the community and reflects issues that all road administrations are facing.

Theme 1 of the PIARC Strategic Plan is focused on Road Administration with the primary objective being to analyse how road and transport administrations are addressing these issues for better performance, accurate planning of road infrastructure and transport to enhance economic and social development and improving customer experiences.

For this reason, Technical Committee 1.1: Performance of Transport Administrations is focusing on identifying best practices for establishing a framework for measuring the efficiency and effectiveness of Transport Administrations. This includes the establishment of assessment indicators, evaluation indexes and benchmarking that can be used to recognize opportunities for improving the overall performance of transport administrations, with a particular focus on customer experience and communication of performance information.

All this is being done considering the impact of the sharing economy and other disruptive technologies on the performance of Transport Administrations.

In addition, this Committee is analysing effective approaches for defining and promoting diversity in opportunity across the roads and transportation sectors, as well as how to attract new employees into the transport industry, specially, young professionals.

2.1. SCOPE OF WORK

This Technical Report specifically is focusing on:

Understanding how Road and Transport Administrations are measuring the efficiency and effectiveness of Customer Experience and Public Value Creation

The strategies and objectives underpinning the work include:

- Defining and creating an understanding of customer experience and public value creation as it applies to road and transport administrations building on the work carried out in cycle 2016-2019 by TC A1 – Performance of Transport Administrations.
- Identifying existing frameworks within road and transport administrations that are aimed at delivering an improved experience for all our customers and stakeholders
- Identifying current practices, methodologies and approaches to measurement aimed at delivering improved customer experience and insights that contribute to better operational and strategic outcomes.
- Identifying current methods and approaches to communicating results
- Determining how community insights can assist with customer facing levels of service within the context of asset management
- Encouraging coordination and collaboration with TC 3.3 – Asset Management

2.1.1. Matters in scope

- Customer insights can include experience, service, focus and should not be limited
- Defining what is understood and meant by interchangeable terms such as customer, community, stakeholder, user and so on so that we do not limit the thinking and approach that is being undertaken
- Considering the implications of this work in the context of the Customer Facing levels of service associated with Asset Management
- There is no restriction in terms of methods of communication considered and should cover the full spectrum from all forms of digital channels through to more traditional forms including print media, town halls, posters and so on.
- Understanding what different customers value and is that being captured
- Understanding Willingness to pay on improving customer experience

2.1.2. Matters out of scope

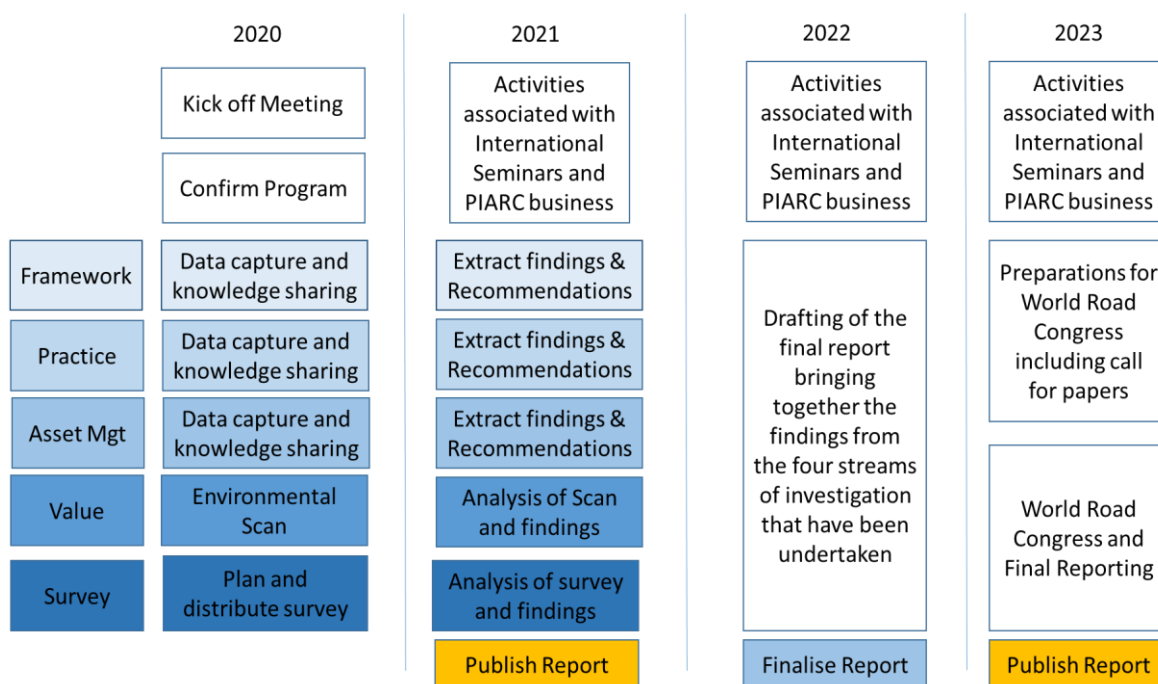
- Stakeholder and customer engagement mechanisms, which whilst they might form part of the methodology and practices, the intent is not to capture or produce a report on forms and mechanisms of engagement.
- Asset management interventions or investigatory criteria outside of customer facing levels of service will not be investigated

2.2. METHODOLOGY AND APPROACH

The following is a representation of the approach to the gathering of information for this report:



The work program is shown diagrammatically here divided into four sequential stages across five specific streams of work culminating in the delivery of the findings at the 27th World Road Congress in Prague in October 2023.



From this program the Working Group has produced the following outputs that have informed and contributed to this report drawing from input across the Technical Committee:

- A report outlining current practice on the methodologies and approaches drawing from Case Studies prepared by developed economies, economies in transition and developing economies
- A survey conducted in collaboration with TC 3.3 - Asset Management with the objective of analyzing the correlation between customer experience, service levels, and asset management.
- Literature Review on Public Value Creation including assembly of related practice examples

2.3. STRUCTURE OF THE REPORT

Following these introductory chapters the remainder of the report is structured as follows:

- **Chapter 3** shows what current practice looks like in respect of **Customer Experience** across a range of transport and road agencies and sets out how the Six Principles of Customer Experience excellence can be applied in the context of road and transport agencies
- **Chapter 4** reports on the findings from the review of **Asset Management** and the interaction with customer facing levels of service
- **Chapter 5** defines **Public Value** creation summarizing key themes and potential applications in transport including develop a relevant model for road and transport agencies.
- **Chapter 6** introduces **six Elements** underpinned by guiding questions
- **Chapter 7** proposes a **Customer Experience Assessment Tool** that road and transport agencies can assess themselves against in their journey to improving customer experience.
- **Chapter 8** identifies the **Findings and Common Themes** arising from the research and analysis
- **Chapter 9** concludes the report with some Reflections on Future Directions

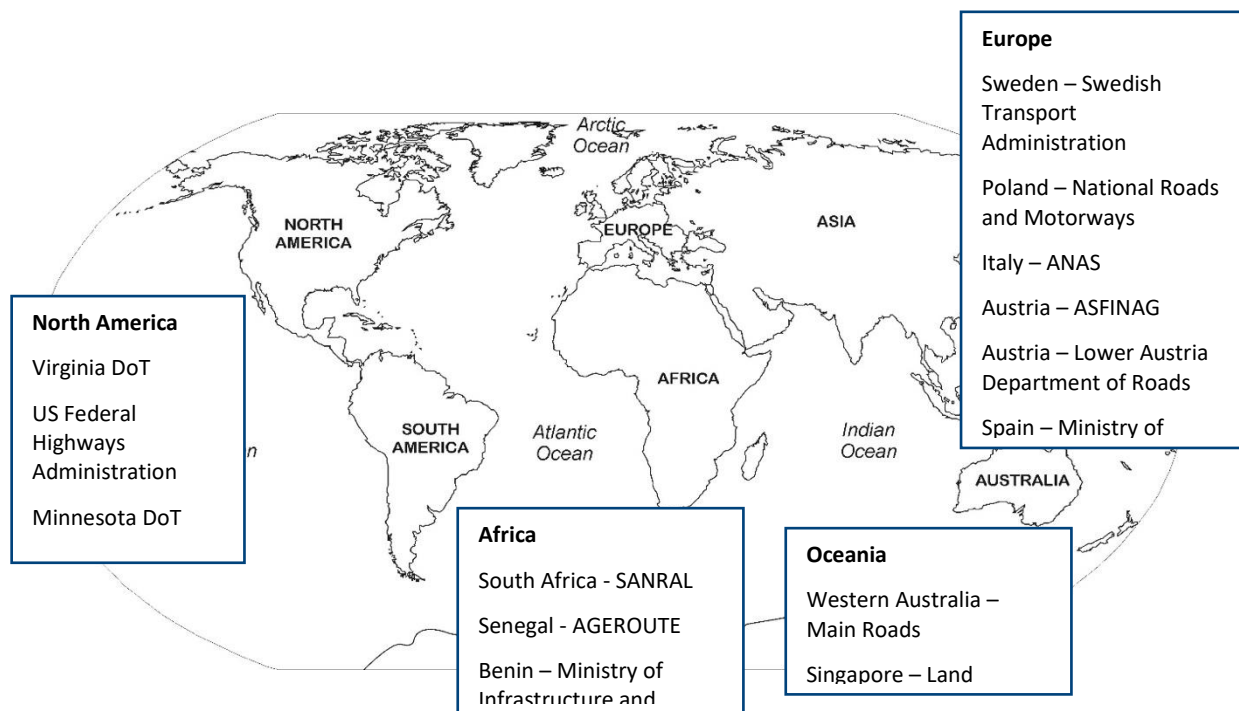
2.4. OUTPUTS OF THE TECHNICAL COMMITTEE

This report should be read in conjunction with outputs from other Working Groups of the Technical Committee 1.1 that include:

- **Working Group 2** which is looking at the Role of Transport Agencies in Shaping Disruptive Technology and Service Models administrations in the face of the sharing economy model and new disruptive and innovative technologies such as connected and autonomous vehicles (CAV), on-demand ride sharing services, Mobility as a Service (MaaS) and so on. These will continue to alter the landscape of how people view mobility, how they travel, how freight moves, and what their overall travel behavior and expectations are. The power of new technologies to connect us along with the emergence of sharing platforms is forcing transport industries to re-evaluate their current business-models is explored in the Technical Report.
- **Working Group 3** is exploring matters of diversity, whether it be gender, ethnicity, culture, disability, age, religion, political ideas or ideology, income or other factors perceived to represent disadvantage in achieving personal and community opportunities. Approaches include positive discrimination, the setting of targets for recruitment or career progression, professional networks, publicity around role models or selective support for educational or training opportunities. The Committee is analyzing and reporting on effective approaches for defining and promoting diversity in opportunity across the roads and transportation sectors including how to attract new employees into the transport industry and profession, especially, young professionals.

3. CUSTOMER EXPERIENCE

Research continues to show that when public agencies offer a better customer experience, they deliver measurable impacts across multiple priorities. This chapter focusses on what approaches are currently happening across the world in respect of delivering an improved experience for all our customers and stakeholders based on 16 case studies from a range of road and transport organizations.



The following is an analysis of the results from the case studies which are explained in more detail in a separate publication available on the [PIARC Website](#).

3.1. COMMITMENT TO CUSTOMERS AND THEIR EXPERIENCE

Here the intent was to understand if the organizations that responded have a Customer Charter or Statement, a Strategic Pillar or commitment or something that states at the highest level within their organization its commitment to Customers and improving their experience.

As you might expect there was no one single response or approach to this reflecting however, all respondents identified either a strategic component or legislative requirement to identify and have some commitment towards customers and the broader communities they serve.

Most organizations reflected their commitment to customers within their strategic framework in some way. In Western Australia, Minnesota and South Africa for example the commitment is up front and center included as strategic pillars and in their Visions. In some cases, the organizations commitment to Customers and customer experience is implied although this would appear to be changing and evolving to being more explicit.

The second most common commitment that was identified through the case studies was an overarching whole of government position that drives the road and transport agencies response to customers.

It is here that we saw the representation of responses from low to middle income countries including Benin and Senegal identifying that there was some overriding mandate to be responsive to customer needs and expectations. However, it is worth noting that it appears that this approach is often also reflective of the role of an organization that has a strong focus on delivery of works and that it is not only in low to middle income countries where this approach is evident.

Based on the Case Studies the requirement to have recognition of customers and their experiences by road and transport organization generally fits within one of these two categories. It is interesting to note that sometimes this approach is also determined by how an organization fits within the hierarchy of its public service. In Quebec, Spain and Lower Austria the primary focus for the road and transport organizations is delivery, whilst customer experience is the responsibility of an overarching Ministry or centralized agency.

It is evident that regardless of where customers and their experiences are recognized in all cases there is a requirement for Government to consider the community in the services that are being delivered.

3.2. CATEGORIZING CUSTOMER GROUPS

Customer Segmentation describes the subdivision of a market into discrete customer groups that share similar characteristics, usually according to needs, past behaviors or demographic profiles. Generally, road and transport agencies are not in the business of making profit from customers and in countries where this does occur those organizations are probably best placed to segment and prioritize customers based on their needs in relation to their role in delivering services.

The response from across all the case studies was quite varied although the one consistent message was that the community is our customer. This is perhaps best described by the Swedish Transport Administration who defines its customers as “the ones we are there for and create value for”. Whilst acknowledging they serve all citizens and businesses the Swedish Transport Administration does further define these groups by types of users and modal groups.

While there is no one single approach all agencies acknowledged that they are about providing timely, accurate and meaningful services to the communities we operate in.

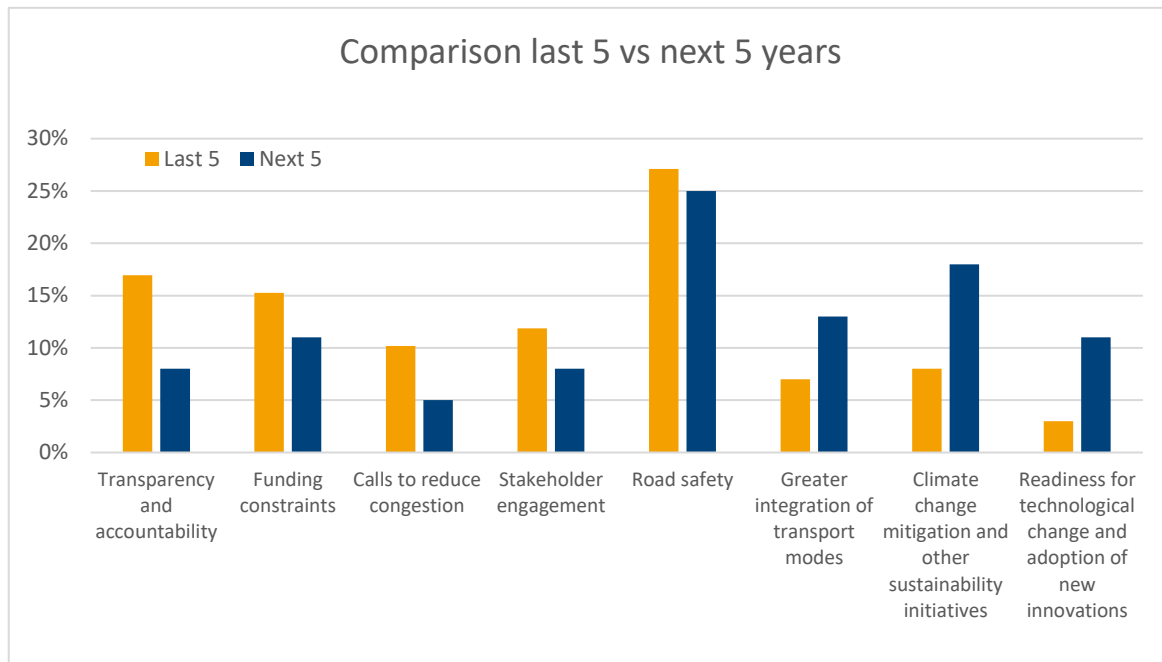
3.3. DRIVERS AND INFLUENCES

The question was asked of all participants to select from a list of options what they would identify as being the five top external drivers influencing their organizations strategic direction and in making decisions in the context of customer and customer experience.

It would come as no surprise that the top influence over the last five years was identified as being road safety, followed by transparency and accountability, and funding constraints coming in a close third. This was quite consistent amongst all respondents including low to middle income countries.

Looking ahead into the next five years Road Safety continues to feature as the primary driver and influence, with climate change mitigation and other sustainability initiatives entering the top five at number two. In this analysis there was quite a difference in view between the two lower middle-income countries who participated, however, it is difficult to draw any conclusions given the low level of responses overall from other LMIC countries.

This graph seeks to compare the overall results for each of the categories identified as being in the top 5 for each period measured:



It should not be unexpected that road safety remains a constant priority and driving influence for all organizations. However, looking ahead there is a significant divergence as to what the likely drivers are anticipated to be and it is interesting that the growth of new technologies, greater integration of transport modes and sustainability issues are at the forefront of strategic thinking and community expectations.

What can also be seen is the growing change and interest in the environment has evolved as the conversation matures into the broader issues of sustainability. This does not diminish the fact that funding and integrity in the form of transparency and accountability, continue to have prominence even outside of the top 5 and that stakeholder engagement remains high as citizens seek to be more involved and engaged in decision making processes.

3.4. MEASURING CUSTOMER EXPERIENCE

Like other industries road and transport agencies continue to grapple with the many facets that need to be reported on to meaningfully capture customer experience across the diverse and sometimes overlapping services provided to citizens.

Just over half of the respondents indicated that they undertook semi-regular measurement of a range of services delivered by their organization. The nature of these measurements varied from formal surveys through to exit interviews from call centers or an analysis of cases from customer relationship management systems and other customer related databases.

In its response the Federal Highways Administration (FHWA) identified that it does not directly measure partner satisfaction and experience, but it does measure the experience of the travelling public. Whereas SANRAL run several different surveys internally and externally to gauge customer satisfaction and perception on a few real time aspects including on media advertising, social media touchpoints and on the ground assessments at “town hall” and community events. Each area focuses on customer perception and what that means for the SANRAL brand.

In Benin they reported that they focus on community satisfaction and the broader impacts that are delivered through projects that improve the road network evaluating the impact of the project and assessing the community's satisfaction and experience. Regular customer surveys are carried out in Singapore to determine customer satisfaction across a range of services provided by the Land Transport Authority (LTA). These surveys match the profile of users based around age, gender and commuting type profiles with the information used primarily to guide internal decision making.

The second most common method of reporting and measurement identified was to undertake annual assessments to determine community perception around satisfaction in the delivery of overall and certain specific services.

In Western Australia and Minnesota, they have been undertaking longitudinal studies for more than 20 years to measure community perceptions of satisfaction on a range of broad service areas. These annual surveys give citizens an opportunity to provide feedback about performance in construction, maintenance and management of the road network. The results help to plan and deliver projects and services based on what the community wants, needs and expects and help to inform future strategies; resource allocation; communication and education efforts

In Flanders (Belgium) they also carry out an annual structured customer satisfaction surveys asking around 600 individuals questions relating to management of infrastructure and delivery of services. These responses derive an overall satisfaction rate and identifies improvements to better meet customer expectations. In Austria, ASFINAG also carries out an annual survey of motorways users exploring overall satisfaction levels and reputation along with satisfaction to strategically important areas.

When it came to measurement approaches organizations fell into two broad methods for determining customer satisfaction. Whatever the basis and frequency of the measurement it is evident that whilst the results are reflective of community sentiment, they are not necessarily reflective of the entire customer journey in respect of the various service offered by road and transport agencies. On that basis it could be argued that leadership teams and management are not necessarily getting the full picture in respect of customer experience. This does not diminish the value of the information that is being collected but it does reflect the difference that we may need to consider when looking at the services we provide to the community and citizens as compared to the services that we offer and provide to customer and stakeholder groups.

3.5. CUSTOMER COMPLAINTS

The final area that was explored was whether mechanisms existed for customers to escalate complaints for which they could not get satisfaction through the road or transport agency. This question did not seek to understand if a customer complaint process existed in each agency but instead sought to identify what is in place if a customer was not happy with the service, response or advice provided by a road or transport agency. It was clear that most organizations do have practices in place for customer and citizens to go to in the event of dissatisfaction with services. Even those that indicated that they don't have some form of body our customer advisory council reported that they had internal teams that seek to respond to customer issues. In all cases there was an external avenue for escalation with most referring to an Ombudsman type of office.

3.6. CONCLUSION

In a recent article EY Australia Partner Kay Hillman commented on the important distinction between customer and citizen in the context of delivery of public services.³ She made the point that

“The customer chooses to do business with you, but a citizen is relying on government for many things that government is there to deliver for us.”

We need to look carefully at what that means from an individual perspective and the experiences they have as they go along their customer journey in accessing the services we provide as road and transport agencies as we serve both customers and citizens and often in the context of being the only service provider in the marketplace.

This is something that will have to be considered as new thinking and approaches are developed around our understanding of how road and transport administrations are measuring the efficiency and effectiveness of Customer Experience and Public Value Creation not just for the community but for individuals as well.

³ Extract from an online article [Citizens, customers and service transformation \(themandarin.com.au\)](https://www.themandarin.com.au/citizens-customers-and-service-transformation/) EY Australia Partner Kay Hillman accessed 19 April 2022

4. ASSET MANAGEMENT

The purpose of asset management can be defined as being “To provide the required levels of service at the lowest life-cycle cost to present and future customers.” Therefore, levels of service are a crucial element of asset management for road and transport agencies.

However, not all aspects of road network performance are relevant to customers as they are generally more interested in the services offered by the network rather than how they are managed. To deliver to the required levels of service, agencies need to know which assets are needed and how they perform against those requirements. These two needs can be separated into:

- Customer - where the focus is on how customers receive services. They tend to be ‘outcome’ statements about service attributes that customers understand and can provide information which relates to their experiences and perceptions. These include, for example, ease of dealing with the road agency, safety, the appearance of facilities, ride comfort, congestion, the availability of directions and staff attitude.
- Technical - which relate to the service the physical asset provides. These are linked but tend to be expressed using technical language, such as average network travel speed and roughness (rideability) levels. They are technical interpretations of the plain language statements used in the customer category. They must be understood by those responsible for delivering the activities, including those who write specifications for works and supervise contracts.

Determining community and stakeholder requirements and translating them into asset management objectives and operational activities, is a complex and challenging task. There are many sources of information that can be used, including demographics, statistics and economic data, as well as community and stakeholder consultation processes.

It is important to understand communities and provide services that meet expectations and serve transport needs. Through effective stakeholder consultation processes agencies can better understand values and expectations, help identify priorities, potential issues, social impacts, opportunities, alternatives and solutions to problems. It also assists in identifying those outcomes and levels of service that the community is prepared to pay for⁴.

To understand how road and transport administrations integrate customer experience into asset management, a literature search on the topic was conducted and a questionnaire was prepared and submitted to various transport administrations. This chapter summarizes the results and main themes that emerged from both the literature research and the analysis of the results of the survey.

4.1. CUSTOMER EXPERIENCE IN ASSET MANAGEMENT – LITERATURE REVIEW

The literature review has identified some interesting results showing that the culture of customer experience and its integration into asset management has quite different levels of maturity. An initial finding was that in countries such as the United Kingdom and Australia, a culture of aligning Asset Management with customer experience is quite established and mature.

The literature review considered information for the UK, Australia, and Spain, and concludes with commentary in respect of the relationship between customer experience and risk management.

⁴ Austroads Guide to Asset Management – Part 4: Customer Needs, Expectations and levels of Service

4.1.1. England

Highways England states that 'Our customers experience using the network is about more than just the quality of roads we build and maintain. It's about how people feel – for example, our customers want to feel safe, they want to have control of their journeys and they want their journeys to be as stress-free as possible'⁵.

To improve performance and service to its customers, Highways England focuses on a constant dialogue with customers, which is expressed through the statement 'Better journeys, better conversations'.

The diagram below clearly shows how Highways England translate the customer's point of view into 'Better journeys, better conversations'.

Highways England acknowledges that first they need to consistently deliver the basics across the whole of their network – this includes keeping the network in good condition, doing roadworks right, providing accurate information and dealing with incidents. They also seek to constantly improve the network and the services offered working with a range of partners and stakeholders. Ultimately, this leads to making progress in the development of their relationship with customers by being better listeners and better at helping their customers to drive responsibly and make the best choices.

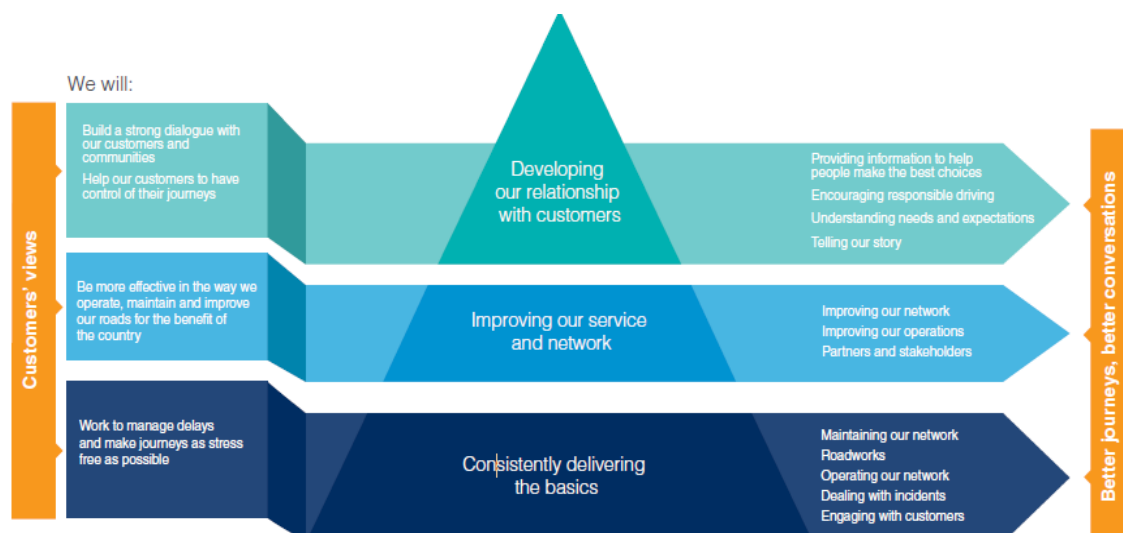


Figure 4 - Better service and better dialogue, so that customers know we are on their side - Highways England

This approach has been further updated in their Annual Customer Service Plan in which six customer centric themes have been identified working together to build their capability, improve delivery of services enabling stress free journeys for customers. The following table shows the interrelationship between these themes.

⁵ Customer Service Strategy "Better journeys, better conversations. Highways England"

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/490538/S150470_Customer_Service_Strategy.pdf

Highways England Customer Service Strategy

Customer insights	Enabling stress free journeys	Improving journey time	Journeys will take the time that customers expect them to. We'll improve the ways we manage road works, incidents and delays to enable safer, stress-free journeys and help drive the economy
		A better end to end experience	Customers will trust that we care about their journeys as they travel seamlessly across our network, using varying modes of transport and linking to local networks
	Delivering the basics	Providing better information	Customers will be better informed and have trust in the information they access, ensuring that they feel safe and in control of their journeys
		A well maintained and safe road network	We will proactively maintain, operate and enhance our network to reduce disruption and help our customers feel safe
	Building our capability	Delivering better relationships	Our customers, communities and stakeholders will know who we are and what we do. We will listen to them and understand what they want and need.
		Empowering our people	Everyone in our organization and supply chain will understand how they can improve customer experience and be empowered to do so

4.1.2. Australia

In the context of maintenance activities, road and transport administrations in Australia have identified that there is a pressing need to link Customer-Based Levels of Service requirements related to road maintenance, to the intervention measures for maintenance (i.e., roughness, rutting, cracking, potholes, etc.) used by road asset managers, otherwise known as the Technical-Based Levels of Service.

The relationship between the Customer Levels of Service and Technical Levels of Service is critical for a customer focused approach to asset management in demonstrating that the Customer Levels of Service are being met as much as practically possible within the confines of the available budget and the road agency's asset management strategy.

This means that a strategic approach across the road network is needed to meet the Customer Levels of Service once the relationships between Customer Levels of Service and Technical Levels of Service are found⁶.

⁶ Austroads Guide to Asset Management – Part 4: Customer Needs, Expectations and levels of Service⁸

Over the last decade several studies were published on this topic including in 2014 when the Royal Automotive Club of Victoria (RACV) undertook a survey of the road and transport needs in regional Victoria⁷. The survey aimed to determine the road, public transport, cycling and walking enhancements which would be needed to cope with the predicted increases in the population of regional towns and outer-suburban areas. The results of the survey showed that the major concerns for roads included:

- the condition and maintenance of roads
- the behavior of drivers and/or riders
- the amount of traffic through towns
- the suitability of speed limits
- whether safe overtaking opportunities were available.

In a similar survey conducted from 1998-2016 the Australian Road Research Board undertook a road user survey on Levels of Service expectations with 11 separate investigations across a range of communities in Australia. These investigations were comprised of road user groups which represented their community on the use of a roads ranging from unsealed rural roads to urban freeways. The results of this survey, which are presented below, showed that different communities often had unique perceptions of the road environment and unique requirements with respect to Levels of Service. The results also show the mean ranking across the communities, and the overall rank. The highest-ranking elements of concern for drivers were related to road maintenance attributes.

Community ranking of factors influencing perception of Levels of Service

Factors influencing perception of service	Mean Rank	Overall rank
Potholes	1.1	1
Safety	1.9	2
Rideability	2.0	3
Road Signs	3.8	4
Drainage of surface	4.7	5
Road width	5.5	6
Rutting	5.7	7
Edge wear	5.7	8
Type of road surface	6.1	9
Road geometry	7.5	10

In 2016, Austroads undertook a similar study of Levels of Service for non-freight road users, to identify and define the asset management needs and Levels of Service requirements for non-freight customers. This study queried participants on their opinions of the importance of different road attributes, introducing the importance of the Customer Levels of Service concept. Further, this

⁷ Response to the Melbourne Planning Strategy “; Royal Automobile Club of Victoria (RACV), 20139

study asked respondents their opinions on how each of these different road attributes performed. This section of the study showed the importance of the interface between Customer Levels of Service and Technical levels of Service aligning the technical performance of road assets with the expectations which customers may have.

The results also showed that there was relatively little difference in the importance ratings given by respondents living in metropolitan, inner regional and outer regional and remote areas. This means that it should be possible to develop one Level of Service framework that covers metropolitan and regional roads, using the same measures for all roads⁸.

4.1.3. Spain

When some experts on the matter were consulted in countries such as Spain, which have public administrations and not autonomous agencies to manage their roads, there is a perception that the opinion of the user about the state of the road is collected by the managers of the administration indirectly, through the information reported by public representatives at the regional and local levels. The latter transfer their perception of the demands that citizens suggest about problems or needs for upgrading in the road network.

In 2003, a technical conference called "The new road culture"⁹ took place in Madrid, in which the experiences from the Community of Madrid and Andalusia were explained. In the final communique that was released the Director General of Roads of the Autonomous Community of Madrid: stated that "When it is sought to establish the client's satisfaction as the ultimate goal of the organization, not only the car driver must be considered, but also other users such as neighbors, carriers, vehicle manufacturers, contractors, and the administration itself, linked to the operation of the road. The concept of service quality is proposed as a parameter to uniformly measure the different "qualities" perceived by all these users."

The Director General of Roads of the Autonomous Community of Andalusia stated that "Work was being carried out on a user satisfaction optimization system, based on conducting various surveys and the creation of a management model leading to the development of a Charter of User Rights User, and implementation of "service quality" criteria in public contracting for roads."

4.1.4. Customer experience and risk management

Finally, a review to determine the relationship between customer experience and risk management was carried out. The literature research and the case studies analyzed in the previous cycles essentially confirm that even in customer experience the management strategy is not accompanied by formal risk management policies or processes.

The purpose of risk management is to help an organization to achieve its objectives, protect assets, follow regulations and ensure financial integrity and achieving value for money outcomes. The review found that organization should:

- ensure the relevant capability to meet business objectives and internal and external requirements
- manage the threats and opportunities that exist in the business

⁸ Austroads Guide to Asset Management – Part 4: Customer Needs, Expectations and levels of Service

⁹ <https://www.aecarretera.com/sala-de-prensa/comunicados/comunicados-2003/912-conclusiones-de-las-jornadas-sobre-la-nueva-cultura-de-las-carreteras>

- ensure the continuity of (and protection of) critical operations
- manage events that occur.

Organizations with responsibilities in the transport sector have much to gain from applying effective risk management. This applies in all perspectives, strategic, and operational. The exercise of searching for studies and publications in general that relate the measurement of user satisfaction and asset management in the field of road management, shows how difficult is to look for references in other languages different than English. This is probably reflective of the circumstance that there are not many road and transport administrations that have used this type of tool, and very few do so systematically and permanently over time.

4.2. CORRELATION BETWEEN CUSTOMER EXPERIENCE AND ASSET MANAGEMENT

To explore the current situation a survey was carried out to analyse the correlation between customer experience service levels, and asset management. This was an opportunity to identify differences and similarities between the approaches used by road and transport administrations to measure the customer experience with special reference to asset management and strategic areas of interest. In addition, an analysis was conducted to identify if and how information related to customer experience impacts the choices of asset management and therefore how that contributes to improved level of service.

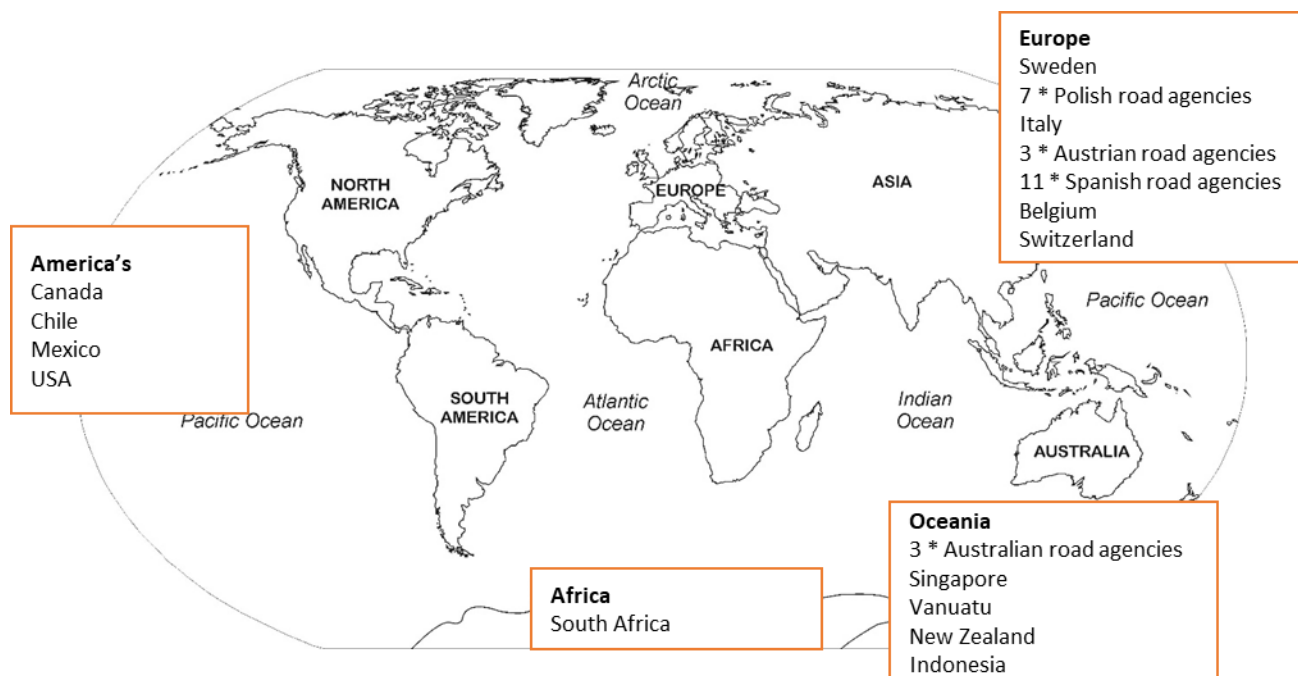
The analysis can be useful to road and transport administrations that have already achieved good level of maturity in customer insights and to those that are of course aware of the importance of this information for improving the customer experience and asset management but have not yet introduced tools or procedures for collecting it.

The questionnaire consisted of five sections:

1. General Information on the organizations participating in the survey including the characteristics and extent of the network managed, the activities carried out and the approaches adopted to communicate with customers.
2. Identification of the survey methods adopted to gather information and the tools used to carry out the surveys
3. Issues Covered aims to investigate what are the purposes for which the surveys are conducted and what are the areas of interest and activity that are being considered
4. Results evaluation and use acquired information on how the results of the surveys are analyzed and shared and how they are used to identify actions to be taken.
5. Future implementation of surveys seeks to understand if those organizations that do not yet use tools for the evaluation of customer experience and customer satisfaction are planning to adopt them with the view to identifying of areas for improvement in an Asset Management context.

4.2.1. General information on responding organizations

Surveys were received from 37 organizations from 17 countries noting that South America, Africa and Asia were not strongly represented.



Most of the responses came from public organisations (91.9%), so results regarding private owned or mixed companies are not well represented. The public organisations represent a diversity of territorial scopes including national agencies, regional or provincial government and local governments. Of these, only just over 40% already conduct customer experience or satisfaction surveys on a regular basis.

With reference to the type of network, 26 organisations manage only non-toll road networks with just over 30% conduct surveys. In the case of toll network operators, the percentage rises to 64% (Toll roads and Both in the table below). This highlights the likelihood that when the road user takes on a role closer to that of the "customer" for the operator there is a greater interest in assessing his level of satisfaction. The following table provides a summary

Type of network managed	Number of organizations	Surveys conducted	%
No toll roads	26	8	31%
Toll roads	3	1	33%
Both	8	6	75%

The responses also show some correlation between the extent of the road network managed and the use of tools for evaluating customer experience or satisfaction. In fact, splitting the organisations between those managing networks greater than 10 000 km and those managing a less extended network, it was found that almost 70% of the former carry out surveys to assess customer satisfaction, while for those in the latter the percentage drops to 28%.

Length of network managed	Number of organizations	Surveys conducted	%
More than 10 000 kms	12	8	67%
Less than 10 000 kms	25	7	28%

When asked what the main activities are within each Organisation, almost all plan interventions on the road network and carry out maintenance activities. Less than half are involved in regulation (38%) and only a small percentage (11%) have toll collection among their main primary activities.

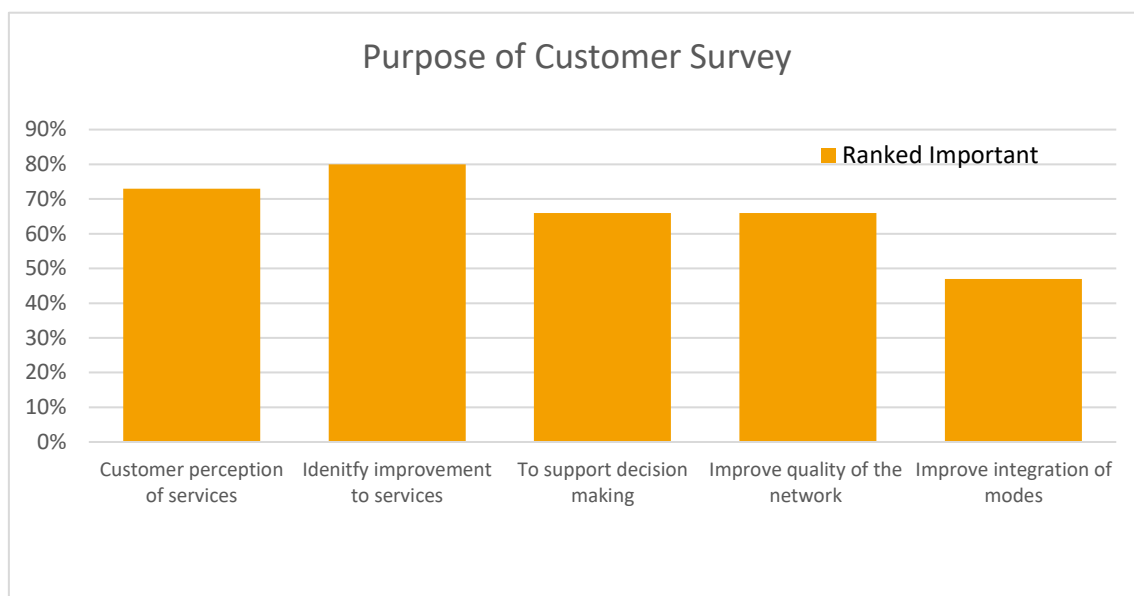
With reference to the question on how organisations communicate with customers, all answered that they have communication channels, which in most cases correspond to the organisation's website and e-mail address. Unexpectedly, however, traditional letters are also among the most common means of communication.

4.3. SURVEY METHODS ADOPTED

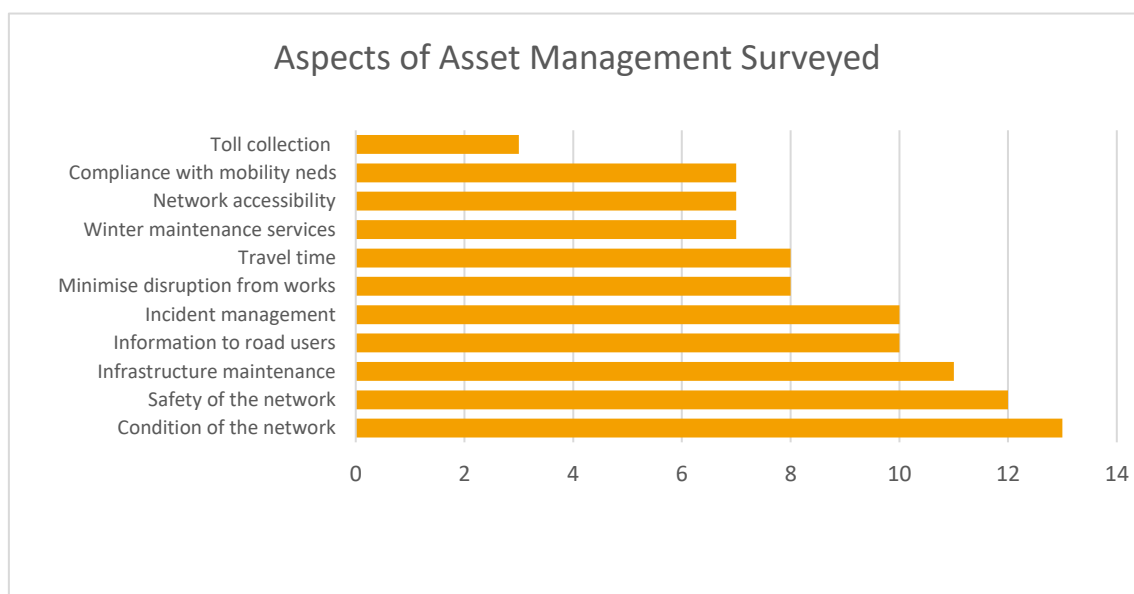
Respondents were asked which tools and methods are used to conduct customer experience or customer satisfaction surveys. The majority reported that they used links sent by email or professional companies to carry out research and analyze the results.

Most organizations said they used both qualitative and quantitative methods based primarily around performance indicators and customer satisfaction index. The results also showed that customer experience is usually conducted on a pre-defined sample of users based on location, age and transport used. Generally, surveys are only carried out once per year and covered the entire network and all services offered.

The following chart shows the five primary practices that the customer survey information is used for. In terms of the main objectives for the surveys it was found that they are primarily to understand how customers perceive services received and to identify opportunities to improve the level of service. However, it is interesting to note that acquiring information to support decision-making processes and focus on improving network conditions were also found to be very important.

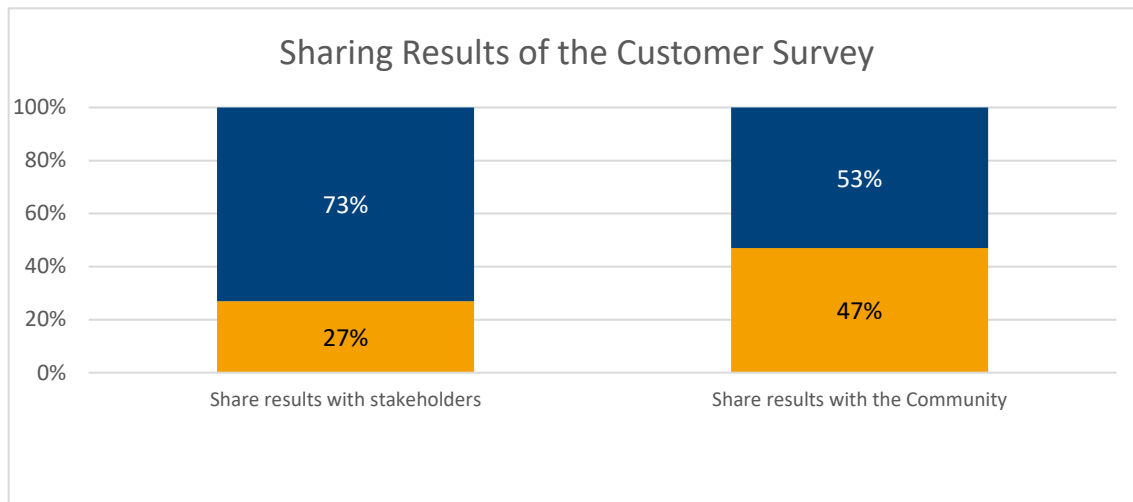


When asked on which aspects of Asset Management the surveys are primarily focused on the greatest numbers is focused on the condition of the network followed by safety and maintenance. This chart shows the distribution of the aspects upon which surveys are carried out.



4.4. RESULTS EVALUATION AND USE

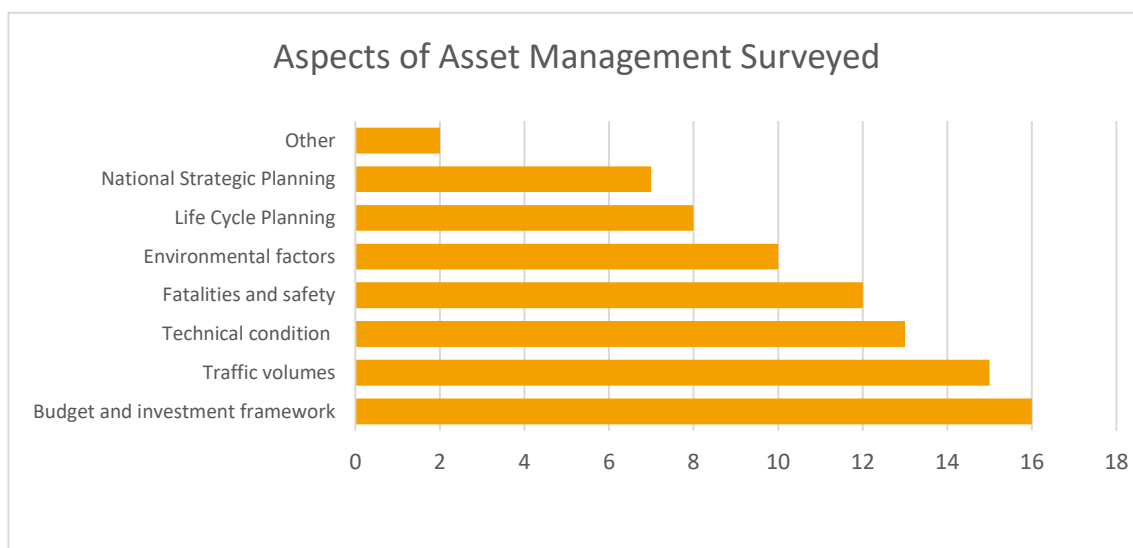
In response to the question “Are specific weightings used as part of the analysis?” it emerged that only five of the 15 organisations utilize this method. When asked if the surveys’ results were used in decision-making and risk management process 87% of organisations confirmed that they used these results as part of their decision-making process.



When it comes to sharing the data, it was interesting to note that there are many approaches to sharing information when it comes to internal communication. This includes dissemination to strategic planning, communications and the technical area of asset management. However, the survey showed that this is not the same when it comes to sharing with external customers. In fact, less than 30% share survey results with their Ministries, Research organisations, municipalities and customers.

4.5. WHAT IF YOU DON'T SURVEY YOUR CUSTOMERS?

Where there is no formal customer survey or analysis survey process in place almost all organisations (77%) confirmed that they do have a decision support system in place. However, where no customer input was included from an asset management perspective the primary means of decision making was based on budget availability and prioritisation processes, traffic levels and volumes and the engineering technical conditions of the network.



More than 70% of organisations consider the evaluation of customer experience and satisfaction useful in identifying areas for improvement in asset management. In particular, the aspects that they consider most important to consider are safety and communication to users on traffic conditions and road works in progress.

4.6. CONCLUSION

The analysis of the characteristics of the organizations surveyed shows a level of correlation between the type of road network managed and the extent to which there is an assessment of customer experience and in turn some use of this information to influence decision making based on customer experience.

In organizations where the measurement and evaluation of customer experience is a well-established process, it is possible to observe a level of awareness of the opportunity to integrate decision-making processes with the customer experience. On the other hand, more than half of the organizations that currently do not carry out surveys state that they do have decision support systems primarily based on two parameters: budget and traffic volumes. Neither of which reflect community or customer experience or expectations. However, both methods are factors that can be measured or estimated regardless of customer experience, and hence customer experience considerations are not considered a priority.

It could be considered that the lack of sharing of the results with external stakeholders demonstrates that whilst most organizations have begun to consider the evaluation of the customer experience as an integral part of the management of the road network, they are still far from a real commitment to the customer and the community. This commitment is essential to start the process that, through optimal asset management, leads to the improvement of the services provided to the community and to an increased trust of road users in the organization itself.

It seems to be an important issue to have a good customer experience evaluation method especially in transport areas where the use of new technologies and technical solutions is growing. This topic is being explored in more detail by Working Group 2 of Technical Committee 1.1, which is looking at the impact of disruptive technologies in transport administrations. There is a strong belief that the use of customer experience in evaluating the implementation of new technologies can significantly contribute to increasing the public value of new technology investment strategies.

Levels of service therefore lie at the very heart of asset management for road agencies because:

- They represent road standards and qualities that the asset owner agrees to provide
- They are key business drivers critical to good asset management practice – the foundations upon which recommendations, conclusions, decisions, and budgets should be based.

Without a good understanding of customers' needs and expectations road agencies face significant risks in meeting those levels of service, including:

- Providing assets and increased capacity in the wrong places
- Overlooking genuine community needs due to demands from a vocal minority
- Having no clear direction on current or future road standards, and therefore what the priorities for investment should be
- Low levels of customer satisfaction with the network
- Spending more on work programs than necessary.

5. PUBLIC VALUE

Public value describes the value that an organization or activity contributes to society. While the private sector's main bottom line of success is shareholder value, the public sector's measure is public value.

The definition that remains equates managerial success in the public sector with initiating and reshaping public sector enterprises in ways that increase their value to the public in both the short and long run.¹⁰

In the realm of creating and measuring value, the public sector faces challenges that are different from the private sector. For example, defining who is the customer. In the private sector, if the customer likes your product, they buy it. For transport agencies it is more complicated. We have cars and trucks traveling along our roadways, and perhaps bicycles and pedestrians as well. How we think about the user experience needs to be viewed through their varying lenses. Lack of competitive pressure and procurement constraints may inhibit innovation, and the use of taxing authority as funding obligates us to be incredibly effective with the resources we have. Public sector agencies often have equity as a primary goal, which is often different than the private sector.¹¹

Finally, our focus on the value created by transport agencies should not be just the impacts to transport customers or stakeholders, but to communities and society. Transportation investments are a positive for the customer but also influence communities. An example is climate or other environmental impacts resulting from transport investments.

5.1. RECAP OF RELEVANT WORK FROM PREVIOUS PIARC WORK

The work of Technical Committee A.1 – Performance of Transport Administrations 2019 report Framework on Measuring Effectiveness and Efficiency of Transport Administrations¹² explored integrated reporting and public value creation. It looked at the Integrated Reporting <IR> approach that brings together information on an organization's strategy, governance, and performance and future directions. Integrated Reporting seeks to define and help organizations demonstrate and communicate how and where they create and sustain value, which are built on creating a complete picture of the organization.

Part of the picture of an organization includes demonstrating that a clear line of sight exists from an agency's Purpose, Vision, and Values through to the services provided. The Strategies adopted should be aimed at improving outcomes including being transparent and accountable in the things that are measured and determining the appropriate levels of performance.

The Integrated Reporting approach seeks to provide insights about the external environment that affects an organization, and the resources and relationships used and affected by the organization.

¹⁰ Moore, M. (1995). Creating Public Value – Strategic Management in Government. Cambridge: Harvard University Press

¹¹ Fagan, Mark (2021) [TPM Webinar 9: Organizational Management and Measures](#) [online]

¹² PIARC 2019R22EN – TC A.1 [Framework on Measuring Effectiveness and Efficiency of Transport Administrations](#) [online]

This comes about through the various forms of capital including financial, manufactured, intellectual, human, social, and natural resources. Technical Committee A.1's 2019 report hypothesized that using IR capitals as a means of performance management could deliver better transport outcomes through stronger strategic planning based on the premise of value creation. The report suggested an alignment and context relevant to the management of road and transport agencies.

The public value work of Technical Committee 1.1 in this cycle builds on this work by exploring current related practices in transport agencies and reviewing new literature.

5.2. RELATED PUBLIC VALUE PRACTICES IN TRANSPORTATION

As part of this report the current practices of several transport agencies relating to the creation of public value were captured. The way agencies are focusing on the value they create for the communities they serve are varied, though are all examples of working to improve overall performance, customer experience and public value creation.

5.2.1. Austria

The Provincial Government of Lower Austria employs an approach to estimate the public value added by provincial road projects based on extended impact analysis (eIA) criteria. The analysis includes a before and after comparison on projects that have been built and opened to traffic in recent years.

Lower Austria's case study¹³ about the estimation of public added value on the provincial road sector notes that ex ante (before building) assessments, mostly through cost-benefit studies, are quite common in the transport sector but ex post (after building) evaluations are rarely carried out. Such ex-post analyses are very useful since not only the construction effects, but the operational impact of a transport infrastructure projects is crucial for the estimation of net public value. Ex-post evaluations can be used to check whether projects really delivered the benefits expected from them at a certain point in time, or to learn which projects performed better and which worse than expected, and why.

The Lower Austria framework for assessing the effects of selected road projects uses a hybrid methodology for ex post assessment. The standard cost-benefit analysis (CBA) is complemented by impact analysis (IA) using an alternative scoring system. The qualitative approach of the IA can be completed by the more quantitative approach of the CBA, which allows an interdisciplinary, transparent, rational and comprehensible assessment of various criteria. Investment and maintenance costs have not been considered in this assessment, because cost-effectiveness is not a goal in IA or CBA.

About 30 different criteria are examined during the planning and operation of road infrastructure projects in the following assessment aspects:

- Traffic development
- Quality of life and land use
- Environment

¹³ Platzer, Michael (2023). Road Infrastructure Planning, Provincial Government of Lower Austria. Estimation of Public Value Creation in the Austrian Transport-Infrastructure Sector. (Forthcoming paper for World Road Congress 2023)

The following table is a list of criteria (or checklist) of the effects of bypass roads indicating which effects can be measured by a standard ex ante CBA and which type of ex post analysis (qualitative or quantitative) is possible. Where there is a check mark in both ex-ante and ex post columns, the criteria should first be tried to include the effect in the CBA. If the listed criteria and indicators do not fully describe the observable effects on public value creation, further criteria may need to be developed.

Ex ante/ex post comparison regarding the public added value of bypass roads

Description of assessment system		Assessment method			
Assessment aspect	Assessment criteria	ex ante	ex post		
		CBA (during project planning)	Qual. analysis	Quant. analysis	ex post method
Traffic development	Travel time (individuals, goods)	✓	✓		calculation
	Reliability of travel time, Accessibility		✓		evaluation
	Relief of local roads	✓	✓	✓	calculation
	Congestion, level of service		✓		evaluation
	Additional mobility (e.g. bike path) *	✓		✓	existing data
	Traffic safety	✓		✓	existing data
Quality of life and land use	Noise and vibrations **	✓		✓	deduction
	Air pollution **	✓		✓	deduction
	Social acceptance		✓		evaluation
	Public health		✓		evaluation
	Climate	✓		✓	calculation
	Land use / sealing	✓		✓	calculation
	Urban development	✓		✓	existing data
	New business and service activities		✓		evaluation
	Separation effects		✓		evaluation
	Cultural assets	✓	✓		evaluation
	Townscape / landscape	✓	✓		evaluation
	Leisure and recreation	✓	✓		evaluation
	Knowledge creation		✓		evaluation
	Agriculture	✓	✓		deduction
Environment	Forestry	✓	✓		deduction
	Hunting and fishery	✓	✓		evaluation
	Fauna	✓	✓		evaluation
	Flora	✓	✓		evaluation
	Biodiversity		✓		evaluation
	Surface water	✓	✓		evaluation
	Groundwater, including water use	✓	✓		evaluation

* Separation effects due to a constant flow of vehicles leads to detours, mainly for non-motorized traffic

** Noise, vibration and air pollution in the city center depends on the relief on local roads.

Case studies (major road projects) were conducted for this framework based on extended impact analysis criteria, the outcomes are reported, and recommendations for future projects in the transport sector are included.

A dedicated managerial capacity and good governance of the responsible administration department is of utmost importance, since solidity and quality in project preparation and execution are the baseline for a proper estimation of public value creation of transport infrastructure projects.

In conclusion, the presented method using ex-ante and ex-post evaluations based on extended impact analysis (eIA) for estimation of public value creation appear to work rather well, as it incentivizes public decision makers to ensure good governance with proper spending of taxes, and to have a liability towards their decisions.

5.2.2. Russian Federation

Since 2019, the national project “Safe High-Quality Roads” has been implemented by the Ministry of Transport in Russia¹⁴. The national umbrella project includes six federal project categories: Regional and Local Road Network; Road Safety; Modernization of passenger transport in urban agglomerations; Highways of the Ministry of Defence of Russia; System-wide measures for road development; and Development of the federal highway network.

The key goal to improve the quality of life of the population. Tasks include:

- Ensuring the necessary level of road safety in the agglomerations participating in the project, reducing the concentration of road accidents
- Bringing the road network of agglomerations into a normative state
- Elimination of congestion of the road network of urban agglomerations
- Increasing the level of satisfaction of citizens with the traffic situation in their region.

Focusing on the Regional and Local Road Network, programs include roads leading to socially significant destinations, including to hospitals, clinics, and medical centres. It is necessary to provide comfortable, safe, and most importantly, fast access to medical institutions since lives often depend on the speed of assistance.

One of the important features of the national project is to consider the opinion of the citizens about the quality of the work performed. The national project contains indicators for assessing citizens' satisfaction with the quality and accessibility of roads, the quality of transport services, as well as road safety.

Another feature of the priority national project was information openness, with attention paid to building a feedback process with the community: interaction with activists, public organizations and ordinary citizens interested in improving the transport infrastructure of their city. Social networks have become a modern tool in building a dialogue between representatives of the project office and residents.

¹⁴ Ilyasova, Irina (2022) Head of the Highways Section of the State Policy Department Ministry of Transport of the Russian Federation. Presentation: Public value in the Russian Federation implementation of the national project "Safe Quality Roads"

Figure 5 depicts the public participation process in the deployment of the national project.

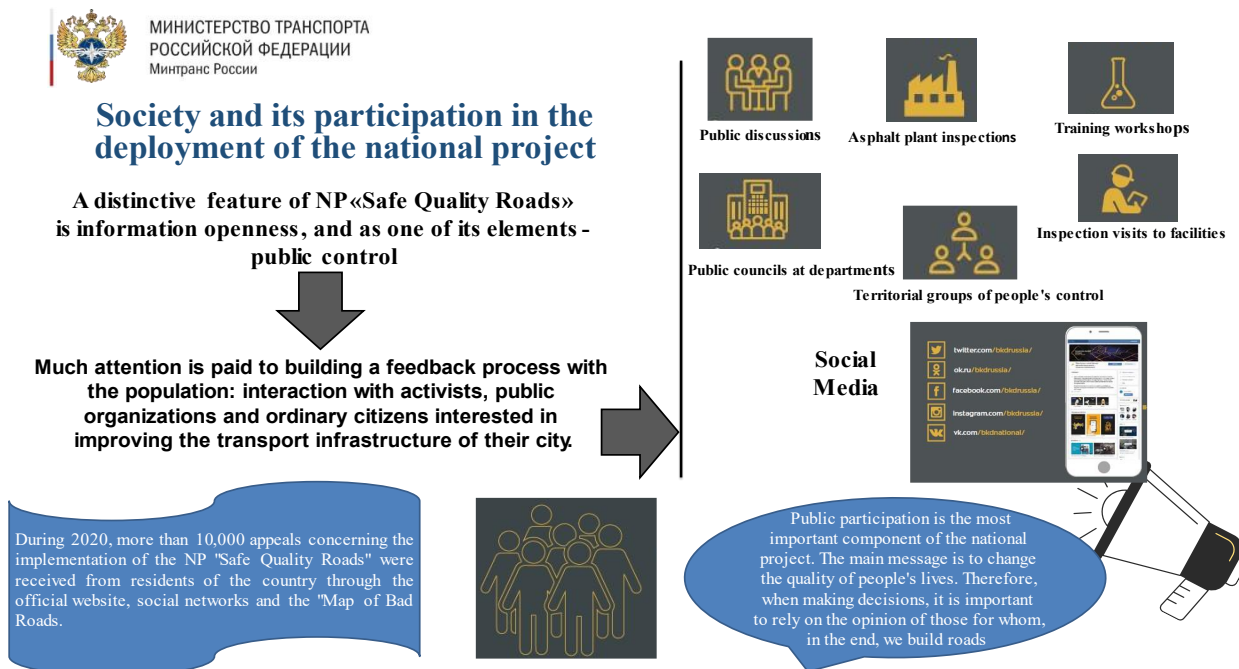


Figure 5 - Russian Federation Public Participation Process

5.2.3. United States

Numerous transport agencies in the United States are updating their visions and missions to more holistic, bigger-picture focuses. For example, **Utah's** transportation vision is *Pathway to Quality of Life*¹⁵. Their Quality-of-Life Framework, displayed below, includes Good Health, Better Mobility, Strong Economy, and Connected Communities.

Quality of Life Framework



Good Health

Encompasses the health of individuals and communities, recognizing the role of active transportation in mental and physical health as well as environmental conditions contributing to health such as air quality and water quality.



Better Mobility

Addresses traditional transportation objectives to reduce delay. It's thinking that goes beyond just moving cars to moving people. Public transit, walking and biking need to become real options for more Utahns.



Strong Economy

Recognizes the vital role of transportation in business and commerce. Not just at the intra-state and inter-state levels, but also how transportation can help inter-city and intra-city economies.



Connected Communities

Points to the intersection of transportation and land use as well as the need for intermodal connections between walking, biking, transit and vehicle travel.

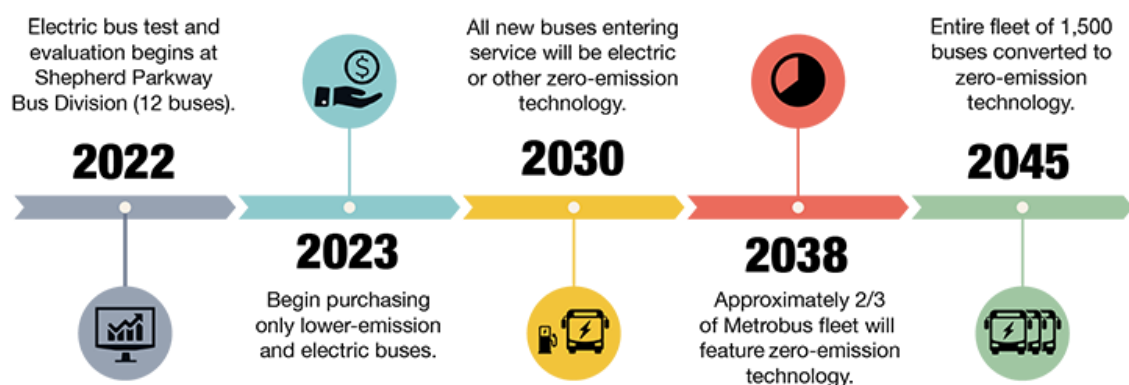
¹⁵ State of Utah. [Utah's Transportation Vision Pathway to Quality of Life](#) (2022) [online]

The **Iowa** Department of Transportation's core focus in its 2021-2025 Business Plan¹⁶ is *Making Lives Better Through Transportation*. This represents a shift from earlier strategic plans that called out a more operational focused mission of *Getting you there safely, efficiently, and more conveniently*.

The **Washington DC** Metropolitan Transit Administration (WMATA) or Metro, as known locally, does not characterize its sustainability vision as part of public value creation; however, their vision would contribute to the economic and societal wellbeing of the local citizenry:

Metro provides a sustainable transportation system that meets the needs of people, communities, and businesses in the region, and fosters social wellbeing, equity, economic prosperity, and environmental stewardship.¹⁷

To realize this vision, one of its initiatives is to transition to a 100 percent zero-emission bus fleet to improve regional air quality and provide customers with a quieter ride. This phased approach will get Metro to a fully zero-emission fleet of more than 1,500 buses by 2045. (citation) Metro will also invest in infrastructure and facility upgrades to support the new buses. Metro's timeline for achieving this goal is outlined below¹⁸.



Metro already operates the largest electric vehicle fleet in the Washington Metropolitan Area carrying millions of passengers each year. With the movement toward zero-emission buses Metro states that this will be another opportunity to “deliver significant environmental benefits for the region and improve the overall experience for Metrobus customers. These new buses will help drive regional air quality improvements by reducing greenhouse gas and tailpipe emissions, simultaneously providing public health benefits for everyone across the Metrobus service area. Without the need for a conventional vehicle engine, Metrobus customers will also experience a quieter, comfier ride.”¹⁹

¹⁶ Iowa Department of Transportation. [2021-2025 Iowa DOT Business Plan](#) [online]

¹⁷ Washington Metropolitan Transit Authority. [Our Sustainability Vision | WMATA](#) (2022) [online]

¹⁸ Washington Metropolitan Transit Authority. [Zero-Emission Buses | WMATA](#) (2022) [online]

¹⁹ Washington Metropolitan Transit Authority. [Equity In Transit | WMATA](#) (2022) [online]

Metro’s sustainability principles include the precept of recognizing that Metro’s investments and operational decisions change lives and that WMATA’s decisions are to be made intentionally to address historical, social, environmental, and economic disparities and racial and social injustice. WMATA has also renewed its commitment to improving equity in transit by working to ensure access to reliable and affordable transportation and recognizes that “public transportation connects people to jobs, health care, schools, grocery stores, housing, and more....”¹⁰

Metro also supports a culture of customer engagement and routinely conducts outreach in support of its capital improvement plan and its annual operating budget. WMATA staff develops a budget proposal leveraging prior survey results and community outreach; conducts a behind-close doors working session with the board to review. The draft budget is then made accessible for public comment; feedback is considered for final budget developed and then published. While public outreach is required by law, WMATA supports a strong culture of community outreach and frequently uses its data on transit ridership passes to obtain POC information for surveying and focus group development needed to test drive and inform operational decision-making²⁰.

5.3. SUMMARY OF RECENT LITERATURE

A review of relevant literature revealed several recent sources of material about public value. A summary of the most helpful or promising sources is presented here. Key themes emerge from the literature – most importantly the need to take a broader view of value, to look toward integrated thinking and management to drive performance and public value.

5.3.1. Integrated Reporting’s <IR> Integrated Thinking & Strategy State of play report

Integrated Reporting’s 2019 Integrated Thinking & Strategy State of play report is an update to the organization’s original 2013 Integrated Reporting Framework that was featured in TC A.1’s report last cycle. Integrated Reporting posits that integration will drive business performance in the 21st century and makes a case for change and the emergence of integrated thinking. Given the range of issues facing organizations, the best performers are basing their decisions on a broader understanding of the resources they use and manage, or interconnected information across multiple capitals, not just financial.

The Integrated Thinking & Strategy Group states:

*Integrated thinking is about creating and protecting value. Linking purpose and values to strategy, risks, opportunities, objectives, plans, metrics and incentives throughout the organization enables better decision-making. Integrated thinking requires effective governance, culture, accountability and transparency. It recognizes the importance of addressing value destruction, boundary conditions, changing conditions/context and feedback loops*²¹.

Several examples of emerging practices in integrated reporting served as inspiration for the model for a sample transport agency presented in section 5.4²².

²⁰ Holt, Jordan (2022). Director of Performance Improvement, Washington Metropolitan Transit Authority. Interview.

²¹ Integrated Reporting (2019). [Integrated Thinking & Strategy State of play report](#) [online]

²² Integrated Reporting. [Integrated Reporting Examples Database](#) [online]

During this PIARC cycle 2019-2023, Integrated Reporting merged with other organizations two times, first with the Value Reporting Foundation and then with the IFRS Foundation (International Financial Reporting Standards). The principles of integrated thinking released in December 2021²³, and the Integrated Reporting Framework²⁴ is still being used so was appropriate for TC 1.1's work this cycle.

5.3.2. Nesta's Public Value How can it be measured, managed and grown?

Nesta's 2019 paper brings together views on better ways to map and measure public value. It builds on work Nesta has done in many fields to find more rounded and realistic ways of capturing the many dimensions of value created by public action. Case studies from the UK are presented including measuring the value of cultural heritage, realizing the value in health. The paper documents the following important concepts²⁵:

- Despite the tensions and dilemmas, public value - in all its forms – can be mapped and often measured in ways that are useful for shaping decisions.
- The best valuation methods avoid the twin errors of, on the one hand believing that a single measure can adequately capture complex values and on the other hand believing that decisions should just be guided by hunch or intuition.
- Public value, like value in markets - is not a static fact but arises from the interaction of changing options for supply and changing demands and public priorities.
- The greatest use of measures of public value comes not just from more detailed analysis but from the conversations and negotiations they prompt. The key for any measure is whether it can help to enhance rather than replace conversations about priorities and decisions.
- Public value methods should help governments decide on actions now that can deliver benefits in the long term whether on climate change, early childhood or healthcare. This requires new ways of managing public investment, but also a much more sophisticated approach to discount rates.
- The debate about public value needs to be tied into much more energetic reform of public finance methods, which need to become more transparent, more focused on outcomes. Better suited to experiment and innovation and better shaped for public engagement. If this does not happen, anachronistic methods for managing finance will crush imaginative attempts to map and measure public value.
- Valuation has limits, in a democracy it should be possible for citizens or politicians to decide that they don't want the state involved in either measuring or seeking to influence important areas of life including families and communities.

One of the most important and difficult concepts for transport agencies in the above list is horizons in time. How to value something today relative to something in 10 or 50 years.

The current use of discount rates in infrastructure analysis makes it very difficult to value important things far into the future vs in the shorter term. This makes it more difficult to justify more expensive but longer-term infrastructure investments and crucial preventive action toward climate change.

²³ Integrated Reporting. [Integrated Thinking](#) [online]

²⁴ Integrated Reporting (2021) [International <IR> Framework](#) [online]

²⁵ Nesta (2019). [online]

5.3.3. Organizational Excellence: Creating Public Value

The Harvard University lecturer Mark Fagan presented on organizational management and agencies' efforts to enhance public value for a Transportation Performance Management Webinar Series in 2021.²⁶ Some concepts in Mr. Fagan's presentation are found in the introduction to Chapter 5 where some of the challenges faced by the public sector in creating and measuring value are discussed.

He explored several examples to exhibit the concept including the value created with (more complex) automated trash collection. Does the shift from two or more people on the truck to one person driving an automated machine create public value? From the perspective of the citizenry, the new bins have wheels that are easier for people to get out to the curb, helps from an equity perspective. Lids on new bins are animal resistant, so may have better health outcomes. Additionally, housing values also appreciate with a cleaner environment. This example was not meant to be comprehensive but to illustrate the idea of what public value is about.

His presentation then moved to how to do this, create public value. Ideas include a mindset shift - for transport agencies this would be going from an operational focused mission statement to a bigger picture, holistic focus. Other areas for creating public value include the Kaizen cycle for continuous improvement; cross boundary collaboration; social entrepreneurship; technology; and measurement management.

5.3.4. The Accenture Public Sector Value Model

Although this definition of Shareholder Value is not applicable directly to the public sector, Accenture believes that it is possible to apply some of the lessons learned from the private sector to the government sector (Public Sector) in order to define and measure Public Sector Value (PSV).

The Accenture Public Sector Value Model²⁷ is built upon the two primary "levers" of public value – **outcomes** and **cost effectiveness**. The model assumes that public sector value is created through generating improved outcomes in a more cost-effective manner.

Outcomes are based on an agency's reason for being as well as on citizen's expectations of that agency. They are less focused on the results of a process, and more orientated towards whether an organization achieves its goals.

Cost-effectiveness assesses what financial costs were borne by the agency, and ultimately the citizens, for that agency to achieve its level of outcomes. Cost effectiveness is defined as the measurement of outcomes divided by a measurement of cost.

Accenture's public sector value model looks at both outcomes and cost effectiveness. By increasing one or the other, governments can be understood to be creating value. An agency creates unambiguous value for its citizens when both outcomes and cost effectiveness increase at the same time.

²⁶ Fagan, Mark (2021) [TPM Webinar 9: Organizational Management and Measures](#) [online]

²⁷ Accenture. [The Accenture Public Sector Value Model](#) [online]

The Accenture model comes with some major challenges including being able to turn performance measures relating to outcomes into measures that have a common denominator – preferably, a general population-based denominator. Additionally, calculating the Cost Effectiveness of an organization is extremely complex and difficult, particularly for small governmental agencies.

5.4. POTENTIAL PUBLIC VALUE MODEL FOR A TRANSPORT AGENCY

The model next page represents the further development of the Integrated Reporting Capitals from the Technical Committee A.1 – Performance of Transport Administrations 2019 report ²⁸ applied to a sample transport agency. The adapted Integrated Reporting Capitals flow from a vision and mission of a sample transport agency, and then map to related objectives, strategies, and measures or outcomes.

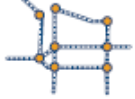
This represents how a transport agency might approach recognizing and reporting the value it creates by documenting what they are trying to achieve, approaches to meet or support objectives, and reporting on measures to track progress.

Transport agency vision and mission in this context could include:

Vision: Making lives better through transportation. A transportation system that improves quality of life maximizing the health of people, the environment and the economy. Creating value by acting responsibly and sustainably in everything we do.

Mission: Plan, build, operate and maintain a safe, accessible transportation system that connects people to destinations and markets regionally and around the world.

²⁸ PIARC 2019R22EN – TC A.1 [Framework on Measuring Effectiveness and Efficiency of Transport Administrations](#) [online]

Resources	Objectives	Strategies/Approaches	Measures
Our People 	- Safe & secure operating environment - Engaged employees with the right capabilities & training - Inclusive workplace that resembles the population it serves - Great workplace reputation	- Develop a strong safety culture - Support employee development - Invest in skill development to address current & future needs - Institutional learning	- On the job injuries - Employee recruitment measures - Employee retention rate - Employee training measures - Diversity Measures
Know-How 	Recognize & cultivate innovation in processes and technology to take up the challenges ahead	- Reward employees who suggest innovation that gets deployed - Invest in forward-looking research - Leverage innovation & technology - Implement best practices	Innovation and efficiencies reporting
Assets 	- Strategically build, manage, maintain & operate all transportation system assets - Ensure efficient & effective use of resources - Maintain transportation network	- Advance asset management; move away from fixing worst first to system management - Consider capital & maintenance costs in project decision making	- Asset condition measures - Remaining service life measures - Life cycle cost measures
Network Performance 	- Increase system reliability - Reduce travel times for individuals & goods - Increase resilience to climate change & extreme weather	- Utilize active traffic management strategies - Provide transportation options - Adapt infrastructure to withstand climate change	- Travel time reliability measures - Congestion measures - Accessibility measures - System & asset resilience measures
Transportation Safety 	- Protect the safety of users - Reduce fatal & serious injury crashes	- Collaborate with partners on education, engineering, enforcement, & emergency medical services - Employ a safe system approach by fostering a culture of safety	Traveler safety measures: annual fatalities & serious injuries
Natural Resources 	Manage environmental impacts of delivering our services including animals & their habitats, plants & their habitats, & biodiversity	- Reduce GHG emissions from transport sector - Reduce salt use during snow and ice operations - Design projects that are appropriate to the surrounding natural elements	- GHG emissions measures - Measure of salt use - Native plantings in highway right-of-way measure - Other environmental sustainability measures
Financial Resources 	- Demonstrate effective & efficient stewardship of public resources - Optimize financial capital - Optimize wider economic impacts - Minimize/eliminate waste, fraud, & abuse	- Manage resources strategically - Invest in projects that are financially efficient from either a traditional BC ratio or using an expanded time horizons view - Do not build what we cannot afford to maintain - Best practices to minimize waste, fraud and abuse	- Project on time/on budget measures - Project scope measures - Measure of sustainable investments - Audit measures of waste, fraud, & abuse
Citizens & Society 	- Strengthen relationships & enhance trust - Create an equitable transportation system - Advance environmental justice	- Employ meaningful & accessible engagement practices - Invest time & resources in relationship building - Conduct regular customer engagement & surveys - Advance equity in decision making processes at all levels - Remove barriers to engagement through statutory changes	- Public trust and confidence measures - Project-level public engagement measures - Equity lens for measures

5.5. CONCLUSION

There are several models and scholarly research to guide us in public value creation, both with the focus on customer experience and more broadly for society. Most importantly we need to broaden our focus from purely operational outcomes to more holistic and integrated thinking. Additionally, how to value and focus on longer term outcomes such as slowing climate change, should be investigated.

New work on Integrated Reporting now includes Integrated Thinking Principles in addition to the capitals applied to transportation in the last PIARC cycle and expanded upon in this report. A prototype released in December 2021 illustrates how the integrated thinking principles of purpose, governance, culture, strategy, risks & opportunities, and performance along with the capitals, support value creation ²⁹. This model, along with others, could be explored during the next PIARC cycle.

²⁹ Integrated Reporting. [Integrated Thinking](#) [online]

6. SIX ELEMENTS OF CUSTOMER EXPERIENCE

Previous chapters have identified the nature of the common themes, experiences and literature underpinning Customer Experience, its relationship with asset management and public value creation. This chapter will now introduce a framework or model of how organizations can consider the elements that are required to consider and ultimately assess their progress on the customer experience journey.

6.1. THE FRAMEWORK

The framework is designed to be relevant to all road and transport administrations regardless of their size, purpose or services offered. Drawing on the research already presented in this report the following elements have been identified as being the most significant aspects to be considered.

Customer experience doesn't just happen it does require deliberate development, alignment and integration into an organizations processes, governance and culture. This Framework is set around six primary elements that all road and transport agencies should be considering as part of their journey to customer excellence.



Figure 6 - The Six Elements of Customer Experience

6.2. INTRODUCING THE SIX ELEMENTS

The six elements are underpinned by a series of practices that describe its most important aspects. It is inevitable in models of this nature that there will be some overlap between the practices with the six elements. In many respects that reflects the multi-faceted and multi-disciplinary approach that needs to be achieved in working towards being an organization providing an excellent customer experience. The following table defines each of the elements and the areas of practice that must be performed well for a road or transport administration to be considered highly capable and high performing.

Element	Practice
CULTURE Describes the behavior, considerations and strategic direction towards customers and their experience in receiving services from a road and transport agency	Purpose vision and strategy are developed with reference to customers
	Teams are empowered
	Values and culture are developed and widely shared and practiced
	Understanding customer needs regarding infrastructure and services provided
LEADERSHIP Approach taken by the leadership at all levels in the organization in making customer experience an integral part of decision making and thinking	Purpose, Vision and strategy are clearly communicated
	Leaders demonstrate and promote desired culture
	Organization structure is efficient and effective to support objectives
	Leaders within the organization understand the relevance of customer experience within the decision making processes
PROCESS The processes, procedures and policies that support and guide delivery of a good customer experience	Changes that impact customers are managed inclusively while maintaining performance
	A well-developed framework and approach support purpose, vision and strategy
	High quality policy and advice are designed
	Staff capability and talent initiatives are established
	Comprehensive, periodic and revisable system to gather information from customers on asset management
INSIGHTS How the organization manages and responds to information that is gathered and how it's used?	Activities are evaluated and used to improve performance
	Management of results is efficient and effective
	Insight from customer experience measurement is shared and applied broadly within the agency and with other stakeholders

Element	Practice
VALUE Consideration of delivery of future focused long term value creation for customers, suppliers and employees	Value creation
	Focus on improving the value delivered (consider in conjunction with the Improve Element)
	Understanding what customers value
	Measure cost effectiveness of the changes deployed in asset management
IMPROVE Consistent methods of improvement are in place to respond to changing needs and meet new challenges.	Purpose Vision and Strategy are responsive to change
	Leaders drive continuous improvement and innovation to achieve better results
	Service delivery models are evaluated and findings acted on
	Revise the system if outcome is not satisfactory

6.3. APPLYING THE FRAMEWORK TO DRIVE IMPROVEMENT

The intent of this framework is to provide a mechanism that would enable road and transport agencies to be able to assess internal business processes, culture and practices at a whole of organization level. Any review carried out should be forward focused and give indications as to where improvements can be made. It is not the intention that a review of this nature be considered as an audit but a health check to the status of activities related to customer experience and how well placed the organization is to address current and future challenges. At its highest level the review is a three-step process:



6.3.1. Step 1 – Assessment Activities

- Create a common **understanding** across the organization as to what is being achieved and the process to be undertaken including identifying which groups or areas of the organization will be involved, typically this would be Executive and a customer facing employees
- Carry out a **self-assessment** survey drawing on the tool provided in Chapter 7
- Facilitate a workshop-based discussion to **reflect** on the results of the survey and agree on a **rating** for each of the six Elements and practices supported by evidence and examples of occurrence.

6.3.2. Step 2 - Analysis Activities

- Conduct **interviews with stakeholders** including customers, suppliers, partners to understand their perspective against the six Elements and practices. Part of the focus here is around understanding the interaction, what is being done well, what can be improved and priorities for the future
- Collect and **explore** additional information from customer surveys, available data, customer feedback and any other mechanisms that might be in place
- Carry out an **analysis** of the information collected identifying differences in views and results between various groups, capture common themes both positive and negative and seek to verify and confirm information received.

6.3.3. Step 3 – Report Activities

- Gather examples of **good practice** that are in place and include them in the report to recognize what is working well and to promote continuous improvement
- Identify **improvement** actions based where there are gaps, lessons learnt and opportunities identified that will result in improved capability and a better customer experience
- **Commit** to an agreed suite of actions, timelines and responsibility for delivery and **communicate** the results of the review across the organization and to all stakeholders who participated

6.4. ASSESSING MATURITY AGAINST THE FRAMEWORK

As part of the self-assessment process, it is necessary to carry out an evaluation to determine the rating to be applied against each of the practices. Ratings provide a strong and sharp summary and helps to provide clarity of scoring and help to facilitate a discussion that means the ratings are based on evidence and sound reasoning. For the purposes of this assessment, it was agreed to adopt a four-point scale removing a neutral point and requiring people undertaking the evaluation to commit to an upper or lower scale. By adopting common terminology to define the ratings should ensure consistency as to how they are applied as participants look for key words and descriptions that match their assessment.

6.4.1. Ratings scale and descriptions (IDEL)

Initial

- Practice is not occurring to any great extent
- Practice is occurring but it is inconsistent, unfocussed or does not meet minimum expectations
- There is no consideration of future needs

Developing

- Practice is occurring but not yet integrated or widespread, tends to be reactive
- Practice is occurring but can be improved
- Improvement opportunities are being identified

Embedded

- Practice is well developed, deployed and proactive
- Gaps in practice are known and managed
- Processes and systems are aligned and help inform improvement actions

Leading

- Commitment to ensure consistency, high performance and recognized as a leader by others
- Regular reviews of practice are undertaken including timely identification of challenges, risks and opportunities
- There is a culture of continuous improvement focused on customer experience

7. CUSTOMER EXPERIENCE ASSESSMENT TOOL

The previous chapter introduced the concept of the six elements of Customer Experience and a range of supporting practices to help road and transport agencies to assess their maturity good customer experience. This chapter will break down that three-step process identified at 6.3.1 so that it can be used as the basis to identify good practice and drive improvements in customer experience across all service areas.

7.1. STEP 1 – ASSESSMENT

7.1.1. Creating a common understanding

Before commencing any self-assessment process, it will be essential to communicate the purpose of the review, outline the methodology and that its aim is not to audit the current situation but to assess what needs to be focused on and how mature the organization is on its customer experience journey.

This is also an opportunity to engage with leadership teams and customer facing staff to identify potential stakeholders and interested parties so that it's clear this is a 360° review not just an inward focused assessment. Essentially the review would be seeking as a minimum to:

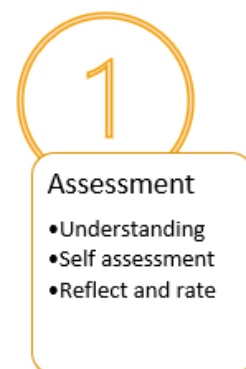
- Understand what the organization is seeking to achieve for its customers
- Gain insight, internally and externally, how well that is being done
- Identify what can be done better
- Be aware of future objectives and challenges

7.1.2. Self-Assessment Survey

Once there is a common understanding of what the approach is, what is being sought and how it will be achieved then it's time to start. The aim here is for each member of the leadership team along with selected customer facing staff to complete a survey that focusses on assessing the organizations maturity against the agreed practices using the rating scale identified at 6.4.1.

In each case the individual is asked to assess each practice as being either “Initial, Developing, Embedded or Leading”. To assist in making that judgement some standard guiding questions have been provided to help define the practice. To help customize and personalize the survey tool there is no reason why an organization could not enhance the guiding questions by using terminology and specific examples relevant to its own practices.

However, it is recognized that where that is done it is important not to lose the integrity of the definition of the Element and the Practice. The survey can be done manually but there are many commercially available low-cost tools that will automate the process aiding in analysis and assessment.



ELEMENT: CULTURE

Describes the behavior, considerations and strategic direction towards customers and their experience in receiving services from a road and transport agency.

Practice	Guiding Questions
Purpose vision and strategy are developed with reference to customers	Do we articulate what we are seeking to achieve in our vision and strategic direction for customers?
	Do we have customer led values and behaviors?
Teams are empowered	Are teams empowered to act on customer feedback
	Are employees engaged in improving customer experience
Values and culture are developed and widely shared and practiced	Have we defined what experience we want our customers to have?
	Are connections with customers respectful and focused on understanding their needs and their experiences?
Understanding customer needs regarding infrastructure and services provided	Do we have as a priority that assessment of customer opinion regarding the services we provide?

ELEMENT: LEADERSHIP

Approach taken by the leadership at all levels in the organization in making customer experience an integral part of decision making and thinking.

Practice	Guiding Questions
Purpose, Vision and strategy are clearly communicated	Do our teams understand what we are seeking to deliver to our customers?
	How clearly do leaders articulate expectations to drive high performance?
Leaders demonstrate and promote desired culture	Is there an executive leader for customer matters?
	Are decisions made that are collective and evidence based?
	Do leaders exhibit the right behavior?

Practice	Guiding Questions
Organization structure is efficient and effective to support objectives	Are the leaders productive and work cohesively?
	Is there a governance model to develop and support customer centric decisions and operations?
Leaders within the organization understand the relevance of customer experience within the decision-making processes	Are all the areas aware of the status of the agency in the field of customer experience?
	Are all the leaders aligned within the virtuous process – and costs – of excellent customer experience?

ELEMENT: PROCESS

The processes, procedures and policies that support and guide delivery of a good customer experience

Practice	Guiding Questions
Changes that impact customers are managed inclusively while maintaining performance	Do we have customer feedback mechanisms in place?
	Are there processes for developing and managing customer relationships?
A well-developed framework and approach support purpose, vision and strategy	Are there documented procedures and guides to support how services are delivered to customers?
	Are asset management levels of service aligned with customer values?
	Has customer journey mapping been undertaken?
High quality policy and advice are designed	Are policies evaluated to ensure they are relevant and meet intended outcomes?
	Are there documented procedures and guides to support how services are delivered to customers?
Staff capability and talent initiatives are established	Are there targeted fit for purpose customer training programs in place?

ELEMENT: INSIGHTS

How the organization manages and responds to information that is gathered and how it's used?

Practice	Guiding Questions
Activities are evaluated and used to improve performance	Do we have tools to gain customer insights?
	Have we clearly defined and articulated what success looks like?
	Do we benchmark against others internally or externally?
	How is performance and other data used to improve services and experiences?
Management of results is efficient and effective	Do you define and understand your customers?
	Do we have measures for success?
	Are customer insights shared with employees
	Is data held centrally enabling integrated analysis?
Insight from customer experience measurement is shared	Is data shared within the organization?
	Is data collected available for the public?

ELEMENT: VALUE

Consideration of delivery of future focused long term value creation for customers, suppliers and employees

Practice	Guiding Questions
Value creation	Have we created value?
	Do we demonstrate that value to others?
	Do we take an integrated approach considering customers, suppliers and employees when thinking about the creation of value through our services?

Practice	Guiding Questions
Focus on improving the value delivered (consider in conjunction with the Improve Element)	Is the system driving change and improvements?
	Do we understand what our customers value?
	Is there a focus on the future and understanding how that will impact on the value derived from the services delivered?
Understanding what customers value	Do we inform customers of the opportunity cost of achieving desired asset management levels of service?
Measure cost effectiveness of the changes deployed in asset management	Do we measure cost effectiveness of the changes deployed because of measuring customer experience?

ELEMENT: IMPROVE

Consistent methods of improvement are in place to respond to changing needs and meet new challenges.

Practice	Guiding Questions
Purpose Vision and Strategy are responsive to change	Do we inform customers of proposed changes to delivery of levels of service against what they value?
	Does the data inform future customer expectations?
Leaders drive continuous improvement and innovation to achieve better results	Is consideration given to what is needed to meet future challenges in delivering services to customers?
	How is feedback used to improve services?
Service delivery models are evaluated, and findings acted on	Are processes and procedures regularly evaluated to improve customer experience?
	Is there recognition to learn from past experiences and from others to achieve improvement?
	Do approaches exist that provide feedback on service performance to customers and employees?
Revise the system if outcome is not satisfactory	Do we reevaluate the system if the outcome is not satisfactory?

7.1.3.

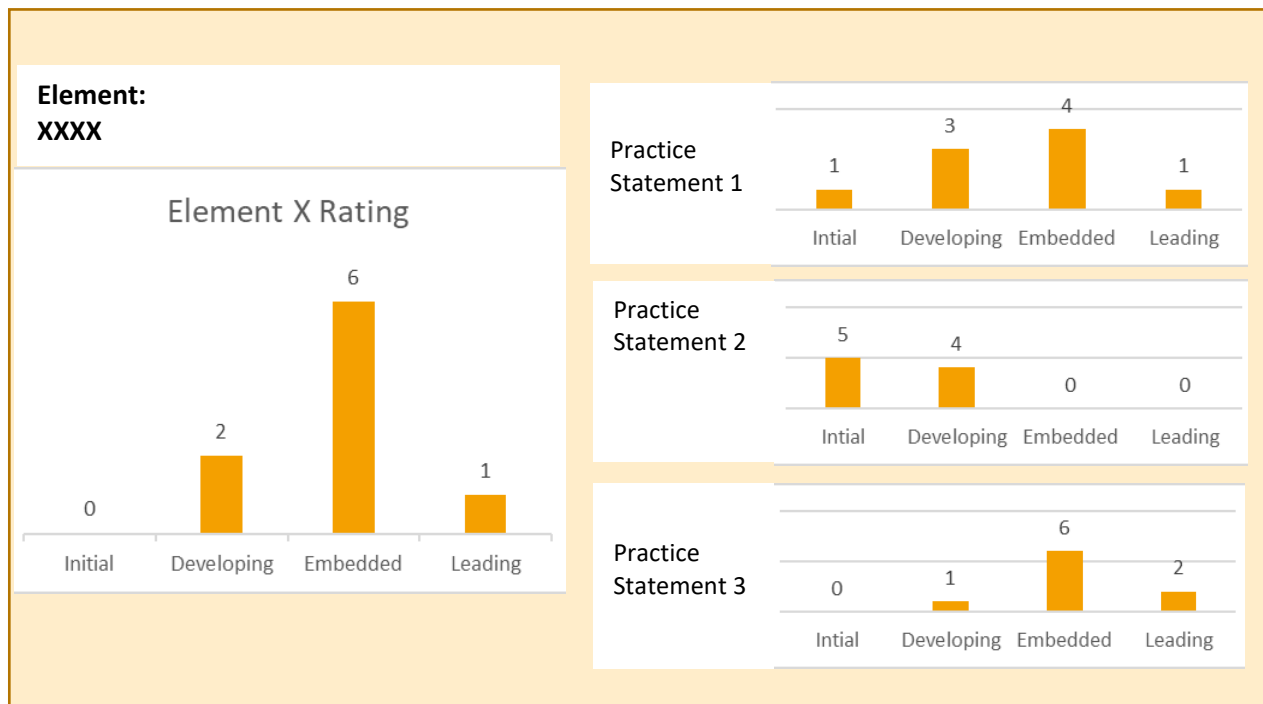
7.1.4. Reflect and rate

Following the completion of the self-assessment survey it is recommended that the results then be discussed in a facilitated open forum to reach agreement on where the organization collectively rates itself considering the results of the survey, what evidence supports that rating and broad consensus from the group.

A simple way to present the information would be to consider providing a summary on a single page showing the collective results of the ratings and enabling the teams to discuss if they consider the ratings to be appropriate, discuss the thinking behind the ratings and collectively come to an agreement as to what the appropriate assessment might be for the organisation as a whole.

This approach provides the opportunity for a transparent conversation, discovery of a range of practices across an organisation or within an individual team and also serve to provide a benchmark for future assessments.

The following is an example of how that information might be presented.



That completes the first step in the assessment process and presents the Leadership Team with an internally focused view of how the organization sees itself against each of the Six Elements. From here a picture is starting to emerge but the next step seeks to bring in the views from those outside of the organization.

7.2. STEP 2 – ANALYSIS

Self-assessment is focused on individual interviews, focus groups, and questionnaires for staff and related parties. However, this approach alone does not provide an independent view and may miss providing a holistic picture and reduce the integrity of the assessment.

Consideration should be given to conducting interviews (either face to face or via correspondence) with customers, suppliers and partners focused on their views of the organization's performance, opportunities and future priorities. This could include a survey of the community or certainly ensure that data already gathered is considered as part of the analysis and tested against the findings from Step 1.

The decision and extent to which these approaches are adopted will depend on available time and resources. In relation to seeking the community's views these can sometimes be influenced by government decisions, especially on funding and some consideration needs to be made to ensure that comments and views are based only on the policy decisions and services delivered by the organization and within their control.

In conducting this analysis there is value in seeking to understand customers, suppliers and partners interactions in the context of the six Elements and it is recommended that focus be given to understanding:

- The extent and nature of their interactions
- What the organization is doing well
- Opportunities for improvement
- Priorities looking at a five-year horizon

Having gathered all this information, it is important to complement and support the findings with data and information captured from existing surveys, measurement tools and performance metrics. This also provides an opportunity to ascertain the veracity of that data and if it is being used to support the organization.

It is here in Step 2 that the bringing together of all this information is looking to identify differences in views or inability to support findings, comments and observations gained up to this point in the maturity review. From here the process should be identifying gaps, common themes both positive and negative and begin to identify potential actions for consideration.



7.3. STEP 3 – REPORT

This is the last step in the process where the final assessment is made on the outcomes from Steps 1 and 2. Whilst it is not the intention of this section to dictate the structure of the final report it is recommended that it include as a minimum:

- Description of the context of the assessment outlining the methodology used, the participants both from within the organization and external stakeholders
- Examples of good practice recognizing and celebrating what is working well and promoting continuous improvement



- Identifying opportunities for improvement and include some prioritization for delivery and where appropriate identify dependencies between opportunities
- Consider the inclusion of a section that defines what success might look like, this will assist in developing performance measures and structuring the actions acknowledging that there may be multiple activities to ultimately achieve the desired outcome.

Once agreement and a common understanding has been reached on the opportunities the next activity should be to develop an Action Plan. The plan should translate insights from the assessments into a series of steps to improve performance. To assist there would be value using the 'SMART' criteria (specific, measurable, achievable, realistic, and timely) for each action and include performance measures.

At the conclusion of the report process the organization may wish to publish the findings and share the insights with those that assisted in the review process.

8. CONCLUSIONS AND RECOMMENDATIONS

8.1. THIS STUDY

This work represents the findings from TC 1.1 Working Group 1's research and deliberation into understanding how road and transport agencies are measuring the efficiency and effectiveness of customer experience and public value creation. At the outset it was agreed that there are many definitions to describe Customer Experience for the purposes of this report it has been defined as "The sum of all interactions in the journey between a customer and an organisation in the delivery of a service".

The report has explored the individual relationships between asset management, value creation and frameworks and measures in the pursuit of improving our customer's experience. There is no one single approach and the results show that we are all continuing to develop our understanding and to identify the correct methods and tools to ensure that we understand what our customers are seeking. This is from an individual perspective and the experiences customers have as they go along their journey in accessing the services we provide as road and transport agencies. We serve both customers and citizens and often in the context of being the only service provider in the marketplace making us in some respects quite unique.

8.2. OVERALL CONCLUSIONS

8.2.1. Measuring customer experience delivers measurable impacts

Research continues to show that when public agencies offer a better customer experience, they deliver measurable impacts across multiple priorities. However, there is no one single response or path among road and transport organizations. The report focuses on what approaches are currently happening across the world in respect of delivering an improved experience for all our customers and stakeholders based on 16 case studies from a range of road and transport organizations.

8.2.2. Relationship between type of road network managed and customer influence

In an asset management context, there is a level of correlation between the type of road network managed and the extent to which customer experience is used to influence decision making. The results from the Asset Management survey showed a correlation between the type of network managed and the extent to which customer experience is used to influence decision making. Whilst all organisations indicated they did have decision support systems in place but not necessarily based on capturing community needs and expectations as part of the prioritisation and decision-making process. It was agreed by the Working Group that without having a good understanding of customer needs and expectations road agencies face significant risks.

8.2.3. Lack of understanding creates greater risk

Road agencies that lack a good understanding of customer needs and expectations face significant risks in meeting customers desired and expected Levels of Service. Based on what emerged from the analysis and discussions around customer frameworks and measures and asset management-based customer levels of service it could be argued that leadership teams and management are not necessarily getting the full picture in respect of customer experience.

This does not diminish the value of the information that is being collected but it does reflect the differences that we may need to consider when looking at the services we provide to the community compared to the services that we offer and provide to customer and stakeholder groups

8.2.4. Public value creation is continuing to evolve

Public value creation continues to evolve as the focus for many transport agencies move from operational and tactical outcomes to more holistic and integrated thinking. The issue of public value creation has been explored for several years and our understanding continues to evolve as we broaden our focus from operational outcomes to more holistic and integrated thinking. Improved customer experience fits easily in a wider model of public value creation. The value element of customer experience considers delivery of future focused long term value creation for customers, suppliers and employees. Many transport agencies are expanding this view, working to ensure their efforts provide a net positive to communities and society.

We are already seeing examples of this throughout this period of research with the following being just three examples from different parts of the world:

- Singapore Land Transport Master Plan 2040 focusses on “mobility” level and commuter experience that is gracious, inclusive and contributes to better health and safer journeys
- Iowa Department of Transport is specifically seeking to Improve lives through transportation
- Sweden Transport Administration’s vision is for everyone to arrive smoothly the green and safe way

While public sector decisions should increase public value in both the short and long term, the more difficult proposition is implementing public value methods that can deliver benefits in the long term. This report has progressed further the concepts from the previous cycle mapping related objectives, strategies and outcomes measures against capitals consumed in the creation of public value.

8.2.5. Key themes identified to assess progress

Six key elements have been identified that road and transport agencies can use to assess progress on customer experience journey. This report includes a framework that has been developed based around these elements that provide the opportunity for an organisation to assess its progress on the customer experience journey. These elements are underpinned by a series of practices that describe the most important aspects that road and transport agencies should considering as they seek to provide the best outcomes for their customers and the community.

8.3. RECOMMENDATIONS FOR TRANSPORT AGENCIES

Building on the overall conclusions, WG1 offers the following recommendations for transport agencies.

8.3.1. Consider individual and community perspectives

Look carefully at the distinction between customer and citizen in the context of delivery of public services. Consider what this means from an individual perspective and the experiences people have as the go along their customer journey in accessing the services transport agencies provide. Transport agencies serve both customers and citizens and often in the context of being the only service provider in the marketplace.

8.3.2. Measure and evaluate your customer's experience

Consider measurement and evaluation of customer experience if not already doing so. Transport agencies that have a well-established process can better integrate decision-making processes that account for its customer experience's. This is especially important in transport areas where the use of new technologies and technical solutions is growing.

8.3.3. Increase focus to encompass integrated thinking

Consider broadening the transport agency focus from purely operational outcomes to more holistic and integrated thinking. A focus on value created by your transport agency should not be just the impacts to transport customers or stakeholders, but to communities and society. This would more squarely fit with the concept of the entire community always being recognised as the ultimate customer of the transport agency.

8.3.4. Assess your maturity and identify gaps

Transport agencies should explore the six elements of customer experience and use the assessment tool to determine their maturity and identify gaps they wish to focus on. The framework provides a mechanism for road and transport agencies to assess internal business processes, culture and practices at a whole of organization level. A review of this nature is to be considered a health check to the status of activities related to customer experience and how well placed the organization is to address current and future challenges.

8.4. RECOMMENDATIONS TO PIARC FOR FUTURE WORK

Whilst the report captures and shares information on approaches that are currently happening around the world in respect of delivering and improved experience, the Working Group also spent some time reflecting on the potential future directions for Customer Experience and Public Value creation and how they are communicated to stakeholders and the community. As the journey continues for road and transport agencies to offer even better customer experience's the following are some suggestions for PIARC that could be considered for further investigation.

8.4.1. Further explore relationship between customer experience and risk management

PIARC should explore further the relationship between Asset Management, Customer Levels of Service and Risk Management and the opportunity to strategically identify and mitigate risk for the transport organization, government and the community. The relationship between customer experience and the concept of "accountability" of the public sector to the community. This is a widely used concept in relationship with the Open Government policies that many countries are following.

8.4.2. Further research into public value creation in relation to transport administrations

Several models and scholarly research undertaken in developing this report guide us in public value creation having a focus on customer experience and more broadly value creation for society. PIARC should consider evolving models of public value creation including the "North Star of Transport Administrations" to one of Societal Public Value.

This should include exploration into what "Public Value" means for Transport Administrations across the world and further develop and adapt the framework for the creation and measurement of "Public Value" by Transport Administrations.

Importantly, transport agencies need to move from an operational focused mission statement to a holistic societal value focus. PIARC should investigate the wider socio-economic and environmental benefits that derive from the delivery of transport infrastructure that is linked to the value creation proposition. This investigation should include emerging performance management topics and areas.

8.4.3. Examine changes in technology and customer experience.

It is important to have a good customer experience evaluation method especially in transport areas where the use of new technologies and technical solutions is growing. This broader topic has been explored in more detail by Working Group 2 of Technical Committee 1.1, which is looking at the impact of disruptive technologies in transport administrations.

There is a strong belief that the use of customer experience in evaluating the implementation of new technologies can significantly contribute to increasing the public value of new technology investment strategies. There would be value in PIARC exploring what changes in transport technology and how customer experience might influence asset and investment planning decisions in respect of new and innovative mobility related technologies.

It's not only disruptive changes in technology that could be considered but also how we can use the extraordinary growth in digital data capture to better understand the customer journey and their experience.

8.4.4. Consider inclusive engagement design that aligns with customer experience

Following the work being done in Working Group 3 of Technical Committee 1.1 which is exploring effective approaches for defining and promoting diversity within road and transport agencies there is the possibility of seeking to understand how we could improve design and planning approaches around more comprehensive engagement that recognises and aligns customer experience and diversity, equity and inclusion.

8.5. FINAL REMARKS

On the topic of Measuring Customer Experience and Public Value Creation for Transport Administrations, WG1 has fulfilled the Terms of Reference set by PIARC for 2020 – 2023. We commend this Report to all transport agencies and hope it will be a useful contribution to PIARC, its member countries and stakeholder agencies, as well as the wider transport and mobility sector.

9. GLOSSARY

Term	Definition
Community	Anyone who lives in your jurisdiction or areas of responsibility
Customer	Anyone who uses or relies on road and transport service
Customer Experience	The sum of all interactions in the journey between a customer and an organization in the delivery of a service
Customer segmentation	Subdivision of a market into discrete customer groups that share similar characteristics according to needs in relation to services delivered
Ex ante assessment	Analysis that happens before building, in this case before a construction project during project planning, such as Cost- Benefit Analysis
Ex post assessment	Analysis that happens after building, in this case after a construction project is complete. Can include qualitative or quantitative analysis of project outcomes.
Integrated Reporting	A process founded on integrated thinking that results in a periodic integrated report by an organization about value creation over time and related communications regarding aspects of value creation.
Public Value	The value that an organization contributes to society in both the short and long term.
Stakeholders	People or businesses that are either interested or impacted by a project or initiative that is being undertaken on the transport network
Value Creation	The process that results in increases, decreases or transformations of the capitals caused by the organization's activities and outputs.

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