

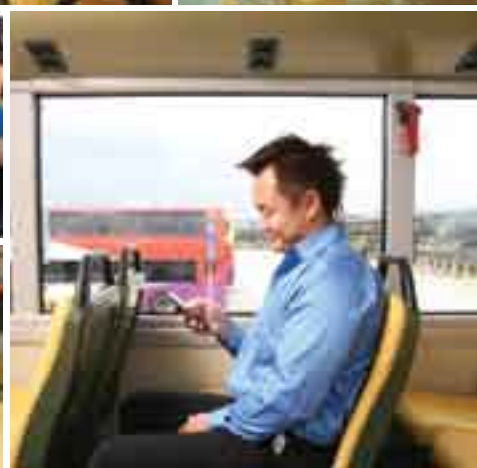


2008 Innovation Excellence Award

Application Executive Summary

Land Transport Authority





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In Land Transport, LTA has to grapple with issues such as increasing travel demand, limited land space, ageing population and increasing expectations from the public. Faced with such challenges, we innovate to ensure that our land transport system serves the needs of our customers and people.

Since the formation of LTA and the formulation of the 1996 White Paper, we have focused on innovation to derive our value propositions and to create a world-class land transport system. The next lap will be on service – meeting people's needs, expectations and aspirations – riding on the success of our innovations. It is our vision to work towards a more people-centred land transport system that will meet the diverse needs of an inclusive, liveable and vibrant global city.

Our innovations are wide-ranging - from traffic management, fare systems, provision of travel information and e-transactions systems that provide added convenience to our customers, to solutions that offer the softer and human side of land transport. These include our outreach efforts to the community through many service innovations, such as Community Partnership, Community Outreach Programmes, and our well-received KPE campaign on road safety.

Over the years, we have won many accolades, including the Singapore Quality Class, People Developer Standard and Public Service Award for Organisational Excellence, amongst others.

We are very honoured to be awarded the Innovation Excellence Award 2008. This achievement would not have been possible without the efforts of everyone in LTA who has worked hard to deliver the many projects and services to the people in Singapore. We also thank all our industry partners who have contributed in their own different ways to our successes as well as the communities at large to whom we have reached out for their understanding and cooperation.

We are happy to share our experiences and journey with you in this executive summary of the application report. We hope that it is beneficial to you and inspire your organisation on your journey towards business excellence.

Mr. Yam Ah Mee

Chief Executive

Land Transport Authority



Organisational Profile

“If public transport is a religion, Singapore must be a holy place.”

- Mr Hans Rat, Secretary General of the International Association of Public Transport

“LTA has implemented a comprehensive inter-modal policy and strategy, which is unique by its comprehensive domain over all modes of urban transport. Going forward, the public transport system design should be focused on the commuters having the most convenient and seamless journey experience.”

- Professor Vukan Vuchic, UPS Foundation Professor of Transportation Engineering in City and Regional Planning



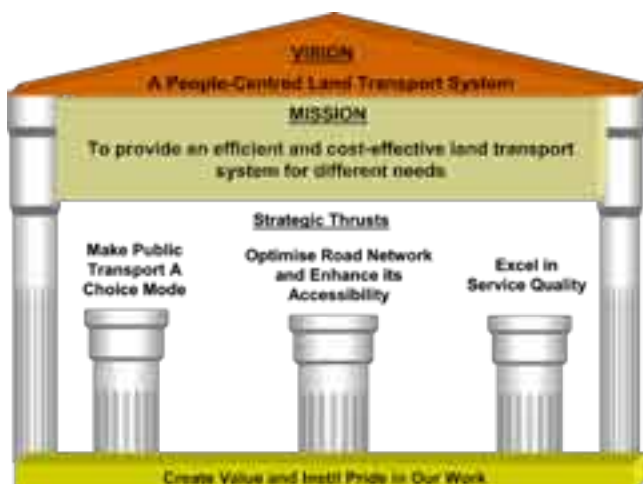
ORGANISATIONAL ENVIRONMENT

The Land Transport Authority (LTA) was set up as a statutory board under the Ministry of Transport in 1995 to spearhead land transport developments in Singapore. It was formed by merging the Land Transport Division of the then Ministry of Communications, the Roads & Transportation Division of the Public Works Department, the Registry of Vehicles and the Mass Rapid Transit Corporation. LTA plans the long-term transport needs of Singapore, taking care of those who drive as well as those who take public transport.

MAIN PRODUCTS AND SERVICES

LTA's roles and functions are as follows:

- Formulation of land transport policies;
- Integrated transport planning together with land use;
- Planning, design and development of Rapid Transit System (RTS) and road infrastructure & systems;
- Management of road traffic and maintenance of related road infrastructure & systems;
- Promotion of Public Transport;
- Regulation of public transport services; and
- Regulation of private transport ownership and usage.



EMPLOYEE PROFILE

LTA has about 3,500 staff working in 5 main locations and 43 site offices in Singapore. LTA has 12 Groups, which consist of 103 Divisions.

MAJOR EQUIPMENT, FACILITIES AND TECHNOLOGIES

Road Pricing Systems

The Electronic Road Pricing (ERP) system was launched in 1998, and is based on a pay-as-you-use principle. It uses a dedicated short-range radio communication system to deduct ERP charges from CashCards that are inserted in the In-Vehicle Units (IUs) of vehicles before each journey. Its flexibility allows traffic congestion to be managed at lower cost and optimises road usage.



E-transaction Systems



The **ONE.MOTURING** portal provides the largest one-stop online site for all matters pertaining to motoring and road transport, including travel information.

LTA.PROMPT (Permit for Road Occupation Management Portal) is a one-stop online system that allows users to submit applications for works affecting public streets/areas to land-managing agencies, with a fast and efficient response to their application.

Organisational Relationships

Relationship with Parent Organisation

LTA is a statutory board under the Ministry of Transport (MOT), which sets the strategic and policy direction for the development and regulation of transport in Singapore.

Relationship with Customers

- Public Transport Users
- Road Users
- The General Public



Relationship with Suppliers

In planning, designing and developing our land transport systems, LTA extensively engages suppliers for consultancy and contracting work. Many of these suppliers are established international players in the transport market.

Relationship with Partners

As a regulator, LTA works closely with public transport operators to continually improve their service performance. As LTA is responsible for the upkeep of roads, we regulate utility agencies. Our partners also consist of IT and other technology-based organisations.

Organisational Challenges

Competitive Environment



As the statutory authority established by an Act of Parliament, LTA is not subjected to market competition. The development and regulation of land transport services are primarily public services-oriented and are strategic in nature.

Some of the issues that LTA needs to grapple with are increasing travel demand, limited land space, and changing demographics and expectations of the general populace. With changing demographics such as an ageing population, land transport facilities and services will need to cater to different needs, e.g. the elderly and people with special mobility needs, such as the wheelchair-bound. There will also be competition for road space between the different users, eg. vehicles, pedestrians and cyclists.

Organisational Directions

LTA's vision is to be a people-centred land transport system that will meet the diverse needs of an inclusive, liveable and vibrant global city. We have identified 3 key strategic thrusts that will shape our land transport policies and development for the next 10-15 years.

They are:

Making Public Transport a Choice Mode

As a city state, Singapore is the second most densely populated country in the world. Making public transport the centrepiece of our land transport system will be crucial, to keep congestion in check and help protect our environment. By 2015, our target is for 80% of public transport commuters to complete their journeys within an hour, from the point they set off, to arriving at their destination, up from 71% today.

Managing Road Usage

Over the past 10 years, the total vehicle population has grown by 27% from 670,000 in end-1996 to 850,000 in end-2007. Besides expanding the road network, we will continue to exploit technology to enhance the efficiency of road operations and optimise the capacity of our road network. To keep traffic flowing smoothly on our roads, we need to adopt a holistic approach that includes road expansion as well as managing demand for road use by controlling vehicle growth and restraining usage.

Meeting the Diverse Needs of the People

We also have to ensure that the transport network is accessible to all, including elderly commuters, families with young children, people with disabilities and those

who are less well-off. This is part of our broader commitment to meet the needs of diverse groups within our people-centred land transport system.



Strategic Challenges

The key drivers for innovation at LTA are:

Increasing Travel Demand

By 2020, we expect that travel demand would increase from the current 8.9 million journeys a day to about 14.3 million journeys a day. Given the land constraint, the projected increase in travel demand must be met by public transport, as it is the most efficient means of transporting large numbers of people. Innovations to cater to this aspect include the symphony for e-payment, and the more recent innovation, real time bus arrival information system (BusAIS) and the Integrated Public Transport Portal.



Limited Land Space

With 12% of our land space already allocated to roads (compared with 15% for housing), we face increasing constraints in expansion of road network and competing needs to build other infrastructure.

Besides ERP, our intelligent transport systems (ITS) relies on the communications among the road user, the vehicle and the road to improve on traffic management. ITS consists of a host of different systems, each with its own characteristics to optimise road network and enhance its accessibility.

The Parking Guidance System was recently implemented to provide convenience to drivers on parking information to minimise unnecessary traffic congestion due to parking search.

Changing Demographics & Rising Expectations of the General Public

With rising affluence, the needs and expectations of our people have increased. One of our key innovations to address this area would be the set up of ONE.MOTORING portal.

The ONE.MOTORING portal is the largest one-stop online site where the public and industries can enjoy one-stop informational and transactional services to meet their complete motoring needs. The Elderly-Friendly Traffic System is designed to detect elderly pedestrians crossing the road. The system greatly benefit Singapore's increasing ageing population, who are at risk to road fatalities.





Leadership

“Singapore has adopted tough but successful transport policies, which are well regarded worldwide...”

- Tony Ridley, Professor of Transport Engineering at London's Imperial College

“It is difficult to quantify the environmental impacts from road pricing, let alone their dollar value. ...Insofar as road pricing has made Singapore a more livable city-state than it otherwise would have been, it may have helped to support real estate values.”

-Gregory B Christensen – “Road Pricing in Singapore after 30 Years”

“... only three cases, namely Bus Rapid Transit (BRT) in Curitiba, and Vehicle Quota System (VQS) and Electronic Road Pricing (ERP) in Singapore, were genuinely national innovations.”

- Professor Hironori Hamanaka, Chairman of the Institute for Global Environmental Strategies (IGES)



Strong leadership drives the direction for an organisation, propelling staff to work cohesively towards common goals. Recognising the importance of leadership and communication, our Senior Management strives to exemplify our Shared Values. Communication sessions, online chats and Work Plan Seminars are platforms that are used to engage and communicate with staff.



Innovative and Service-oriented Organisation Culture

We emphasize on Innovation and Service to delight our customers from the planning right through to enhancing our land transport system for the people. This is encapsulated in our Strategic Thrusts that form the pillars supporting our Vision and Mission.

Our Senior Management believes that leadership is vital to drive innovation in the organisation. Hence, the various Strategic Thrust Committees are spearheaded by the Chief Executive and our Senior Management takes on the role of championing each respective thrust. The committees meet on a quarterly basis to review our key performance indicators and various initiatives to ensure effectiveness.

Our Shared Values



Our six Shared Values and the desired behaviour and practices are illustrated in Table 1.

We encourage the seeking of innovative, effective and safe solutions. Hence, we identified innovation as an important component of competence. As such, an example of “competent” behaviour is to “explore & adopt innovative solutions”.

Various activities and programmes are introduced to promote the Shared Values and also to align staff towards achieving the organisation’s vision and mission. Through these initiatives, we seek to foster a learning culture which is essential for the development of a highly competent workforce. Staff also understand their role in contributing to the effectiveness and success of the organisation.

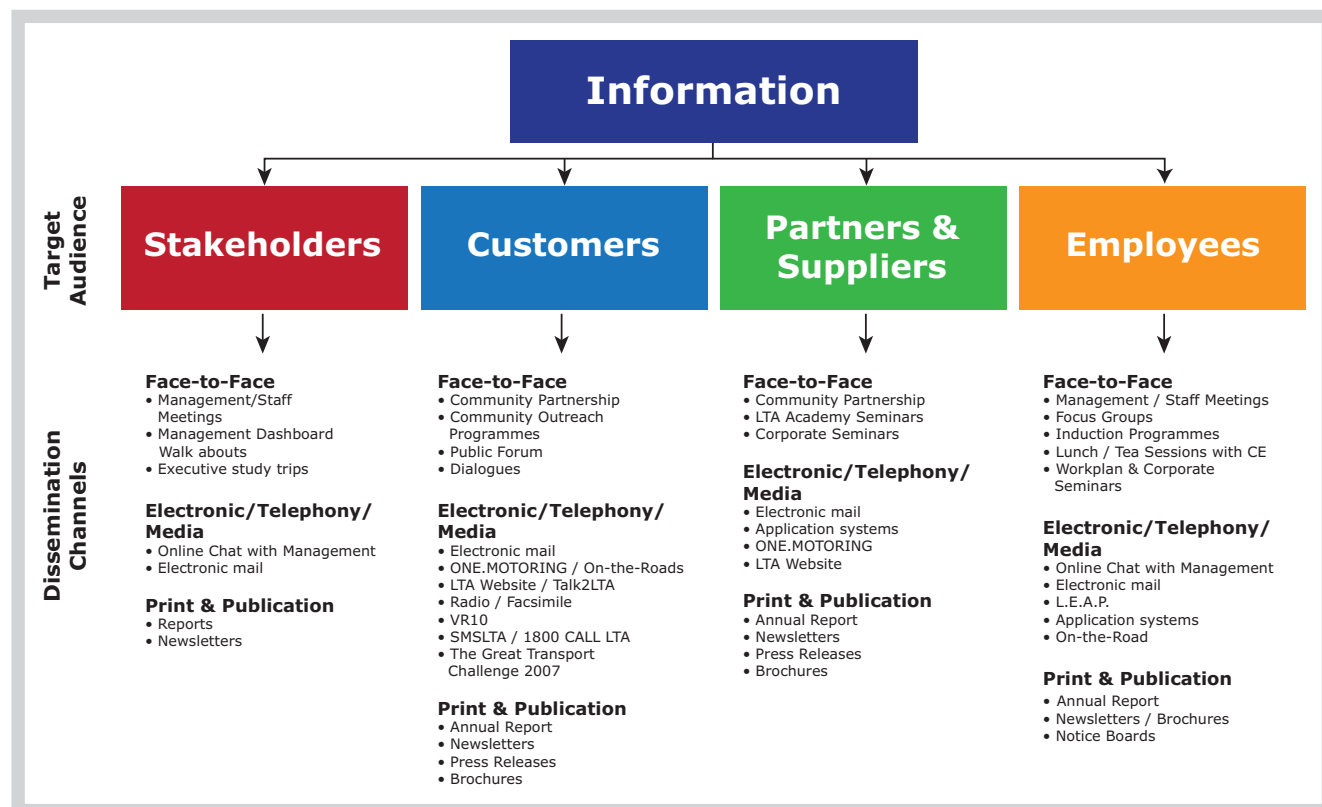
At the strategic level, promising innovations are evaluated and approved in trial use by the Land Transport Innovation Fund (LTIF) Committee. The effectiveness of these improved practices is evaluated quantitatively and the results are communicated to staff.

Communicating LTA's Vision, Mission and Values




Our Senior Management actively engages our staff, stakeholders, partners & suppliers and customers regularly through a variety of channels.

Apart from traditional communication media, our Senior Management have also taken the innovative approach to experimenting with technology, such as online chatting with staff and podcasts.

Senior Management actively supports and participates in corporate events and activities organised by the various divisions. These channels encourage 2-way communication between staff and the Senior Management to ensure that our Vision, Mission and Shared Values are cascaded down to all levels of employees.



Modes of Information Dissemination

Values	Behaviours	Practices
 <p>Commitment to Goals ... Towards a common Mission ...</p> <p>We are committed to achieve corporate goals through understanding individual roles.</p>	<p>I...</p> <ul style="list-style-type: none"> understand my role and contribute to LTA's goals persevere to achieve my goals take part in the formulation of work plans align all work plans to LTA's strategic goals set SMART (Specific, Measurable, Achievable, Realistic and Time-bound) goals and guide my team have regular meetings with my colleagues on work progress encourage and compliment good performance 	<p>Annual Corporate Planning Process</p> <ul style="list-style-type: none"> Annual Corporate and Group Work Plan Seminars Balanced Scorecard Biennial Board Retreat Annual Corporate Retreat Employee Opinion Survey (EOS) <p>Key Corporate Meetings</p> <ul style="list-style-type: none"> Corporate Management Meeting Strategic Thrust Steering Committee Project Supervisory Committee Project Safety Review Committee Corporate Safety Committee Future Lines Committee Road & Transportation Committee Rail & Engineering Committee Road Projects Committee Risk Management Committee <p>LTA's Quality Assurance Achievements:</p> <ul style="list-style-type: none"> Public Service Award for Organisational Excellence Singapore Quality Class ISO 9001:2000 Certification, <p>Awards</p> <ul style="list-style-type: none"> LTA Outstanding Award LTA Merit Award LTA Service Awards LTA Long Service Awards Innovation Awards Staff Suggestion Awards
 <p>Teamwork ...Working Together...</p> <p>We are part of the LTA family and we work and play together to achieve a common goal.</p>	<p>We...</p> <ul style="list-style-type: none"> work and play as a team share resources, knowledge and experience as we work towards achieving our goals overcome our differences and value our colleagues' contributions harness each team member's unique strengths to build strong teams 	<ul style="list-style-type: none"> Buddy and mentor scheme Teambuilding - After-office hours games Participate in inter-agency sports and games <p>Involve in cross-functional projects</p> <ul style="list-style-type: none"> Matrix Approach QuESTs ACE Dinner & Dance LTA Staff Club Special Projects such as Musical Nite, Land Transport Gallery Participation in Inter-Ministerial and Statutory Board Games – Dragon Boat (Management Team)
 <p>Customer Focus ... Service with a Heart</p> <p>Embracing our Service Charter, we are committed to make your journeys enjoyable and our service delightful so as to provide excellent service for a people-centred land transport system that Singapore is proud of.</p>	<p>I...</p> <ul style="list-style-type: none"> seek to understand my customers so as to keep myself abreast of any changes in their needs. will delight my customers by demonstrating CORE values: Creative: Think out of the box One-Stop Seamless: Provide a single point of contact Responsive: Empathise and be proactive Efficient: Speedy response and quality result treat my colleagues and staff as my customers 	<p>External Customers</p> <ul style="list-style-type: none"> LTA Service Charter Regular Public Opinion Survey & Customer Satisfaction Surveys 1800-CALL LTA ONE.MOTORING portal Talk to LTA Portal 77LTA (SMS LTA) Community Outreach/ Partnership programmes Focus Group Discussions Guidelines for response time to feedback <p>Internal Customers</p> <ul style="list-style-type: none"> Regular Employee Opinion Survey 360-degree Feedback Staff feedback Mystery Customer Audit Internal Training (e.g. Excel in Service Quality, Using NLP towards Service Excellence, ESQ Spa) <p>Awards</p> <p><u>Annually</u></p> <ul style="list-style-type: none"> LTA Super Star Special Recognition Award <p><u>Quarterly</u></p> <ul style="list-style-type: none"> LTA Shining Star LTA Star





Values	Behaviours	Practices
 <p>Competence (Safety and Professionalism) ... Forward Looking, Dare to be Different ...</p> <p>We seek innovative, effective and safe solutions.</p>	<p>I...</p> <ul style="list-style-type: none"> • deliver cost-effective and safe solutions • internalise safety as an instinct • work to the best of my ability • continually upgrade my skills through training and exposure • display professional conduct even in adverse situations • ensure a safe working environment • provide training and development opportunities • give due recognition to good performance 	<ul style="list-style-type: none"> • Total Learning Plan – Individual training roadmap • People Developer Standard • CMG – Emergency preparedness • Safety Policy & Standard • Regular safety tours, safety reviews & general inspections • Safety workshops & convention • Construction staff safety awards • Safety newsletter • Dual-track Career Progression (Specialist and Management) • Appointment of Chief Engineers to drive various areas of competency, tracking and development of expertise • Talent management to retain knowledge within organisation
 <p>Competence (Innovation) ... Forward Looking, Dare to be Different ... We seek innovative, effective and safe solutions.</p>	<p>I...</p> <ul style="list-style-type: none"> • dare to ask “Why Not” • actively seek to improve ways of doing things • support and encourage new ways of doing things • ensure that the environment is conducive for innovation • listen with an open mind 	<ul style="list-style-type: none"> • QuEST • eIDEA • Land Transport Innovation Fund (LTIF) • Quest For Excellence Day • QuEST clinic and workshop
 <p>Integrity ... To be fair in all our dealings</p> <p>We have the courage to discharge our duty with a strong sense of honesty and fairness and to do the right thing, regardless of temptations and pressures to do otherwise.</p>	<p>I...</p> <ul style="list-style-type: none"> • take pride in my work and organisation • am trustworthy and keep my promises • take responsibility for my actions • do the right thing without fear or favours • do the right thing even if nobody is watching • watch the talk • ensure transparent proceedings where practicable • lead by example 	<ul style="list-style-type: none"> • Whistle- blowing (IA) • Internal Audit • QMS procedure • Independent checks • Corrupt Practices Investigation Bureau talks for all staff • Staff circulars to remind staff not to accept advantages of any form from contractors or public
 <p>Care and Concern ... Respect and Care for all</p> <p>We care for each other because we are a family; we care for the community and environment because they are a part of us.</p>	<p>I...</p> <ul style="list-style-type: none"> • care for the environment • serve the community with a heart • encourage my colleagues by nominating deserving staff for GEM cards or other awards • care for our staff by providing good staff welfare and support work-life balance 	<ul style="list-style-type: none"> • Going The Extra Mile (G.E.M) scheme • LTA Cares Programme • D&D and group year-end function • Flexi-work arrangement • Sustainable Development Framework • Bursaries/Grant • Communication sessions • S.H.A.R.E. programmes • Employee assistance programme • Worklife Balance Scheme • Workplace Health Programme • Count-Me-In 2²

Table 1: Shared Values Policy, Behaviour and Practices





Planning

“Singapore is reputed for its balanced transport policy in keeping people on the move. Instead of leaning back and being satisfied, LTA is gearing up to prepare for the future and this is a strong point.”

- Mr Hans Rat, Secretary General of the International Association of Public Transport



“The Republic of Singapore has long had a reputation for innovative approaches to transport policy. Its Area Licensing Scheme, introduced in 1975, predated by over 20 years other schemes using road pricing to reduce congestion, and its rail and bus systems are among the few to operate without government subsidy.”

- Professor Tony May, Professor of Transport Engineering of University of Leeds



Strategic Planning Framework

LTA conducts a structured and systematic corporate planning process to develop and deploy short and long-term plans to achieve our Mission and Vision. To ensure the effectiveness and relevance of the plans, the LTA Strategic Planning Framework adopts an integrated, top-down and bottom-up approach that actively involves internal and external stakeholders.

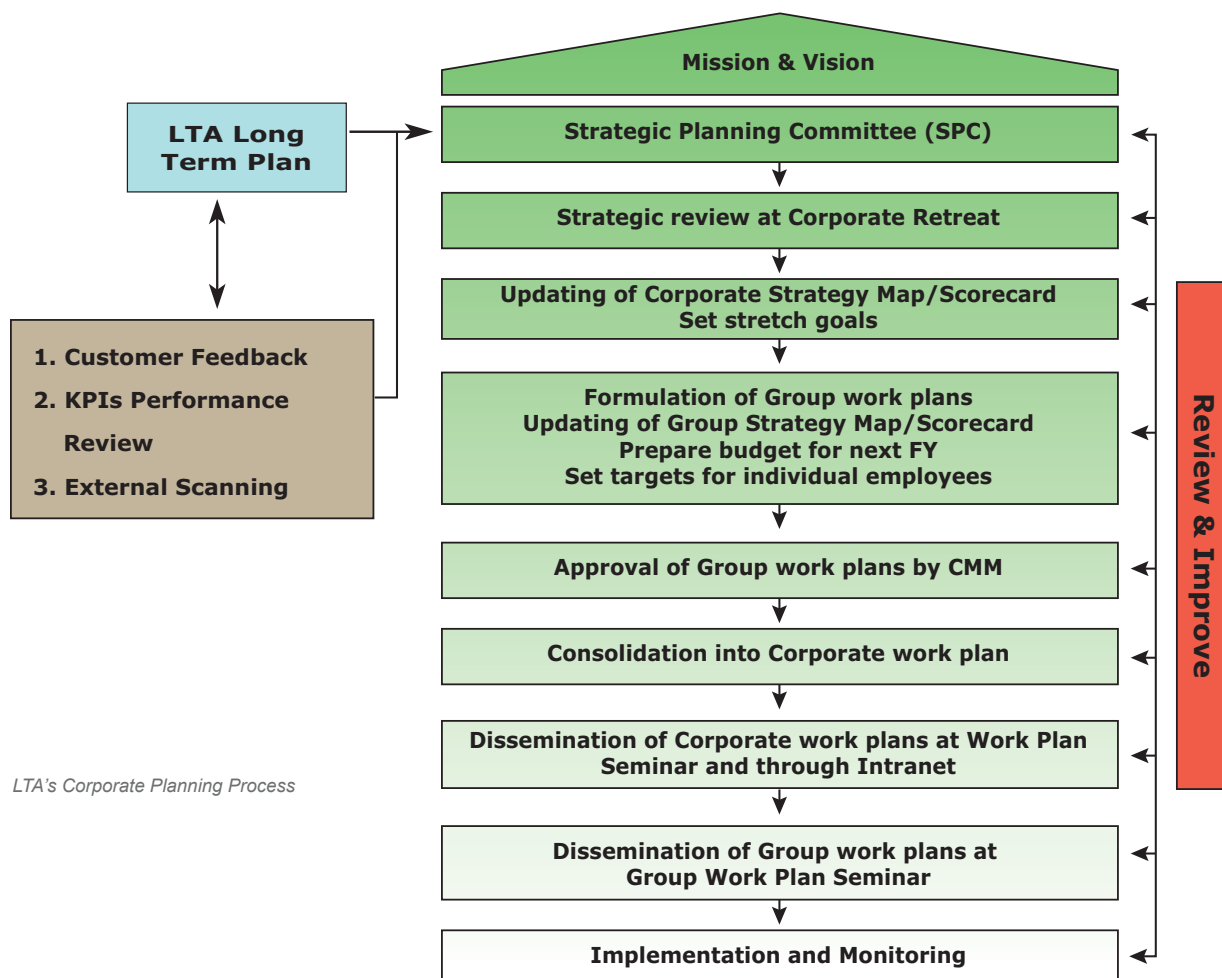


the 4 Strategic Thrusts (STs) that are critical to the achievement of LTA's Mission and Vision. This methodology is cascaded and deployed at the Group level to ensure alignment of objectives throughout the organisation. A set of comprehensive Key Performance Indicators (KPIs) is established to measure and monitor LTA's performance in achieving the SOs under each ST.

Long Term Strategic Planning

Given that the nation-wide impact of a land transport system and infrastructure development necessitates synergised and far-sighted planning, LTA undertakes a robust and consultative Long-term Strategic Planning Process over a 10 to 15 years horizon. The LTA strategic long-term plan is used as inputs to formulate and drive the LTA Annual Corporate Planning Process.

LTA's corporate planning process employs the Balanced Scorecard (BSC) methodology to formulate and articulate key Strategic Objectives (SOs) under



LTA's Corporate Planning Process

Annual Corporate Planning Process



Strategic Review

To initiate the Corporate Planning Process, LTA conducts internal and external environment scans to identify and surface emerging strategic issues and challenges for discussion at our annual Corporate Retreat.

In our continual quest for innovation excellence, we involve young officers in Amoeba Teams. The teams discuss and present on issues that they do not usually encounter in their daily work, thereby providing fresh ideas and perspectives. Many of these officers are also active members of our innovation committees.

LTA management also formulates corporate objectives and strategies for the following year taking into account the strategic issues and challenges identified; benchmarks are used to establish the stretch targets and the Corporate BSC is updated to reflect any changes in business strategy or direction.

Work Plans

All the Groups in LTA organise their respective retreats to formulate the work plan relevant to their roles and functions. Individual employee's goals and targets are set to ensure alignment throughout the organisation.

Key initiatives and objectives are consolidated to form the Corporate Work Plan which is cascaded to staff during LTA's annual Work Plan Seminar. Group Work Plan Seminars are held to further cascade to the staff their roles in achieving the corporate objectives.

Continuous Review and Improvement

Our Senior Management actively monitors the development progress of the initiatives and KPIs via the LTMP Steering Committee and four quarterly Strategic Thrust Steering Committee Meetings.

As part of a continuous learning process, the LTA Strategic Planning Framework is reviewed to identify gaps and areas of improvements. On top of the BSC, LTA has institutionalised an Enterprise Risk Management (ERM) framework. This guides LTA's strategic review of the risks including identification of emerging trends and how they impact LTA's risk profile, and management of these risks.

Key Strategic Objectives & Goals

LTA's key Strategic Objectives (SOs) are captured in the Corporate BSC Strategy Map classified under the following four Strategic Thrusts (STs):

- **ST 1** - Make Public Transport a Choice Mode
- **ST 2** - Optimise Road Network and Enhance its Accessibility
- **ST 3** - Excel in Service Quality
- **ST 4** - Create Value and Instil Pride in our Work

The realisation of the STs drives the achievement of LTA's Mission and Vision. Aligned to the STs, the SOs are supported by key levers to enable efficient and effective implementation of strategies.

Performance Review

LTA monitors and reviews our performance, both strategic and operational, on a structured and regular basis to ensure that the initiatives progress as planned and that the plans remain relevant to reflect changes in the business environment.

Strategic Review

LTA's BSC has been successfully implemented across the organisation to measure and review our strategies. The four ST Steering Committees, chaired by CE and attended by the Senior Management, convene quarterly to review and update the KPIs of the major initiatives under each ST. The committees also provide strategic guidance on how best to achieve the Strategic Objectives (SOs) in light of the changes to the business environment.

With the launch of the LTMP, the LTMP Steering Committee was formed, and the Senior Management convene bi-monthly at this meeting to monitor the implementation and progress of LTMP initiatives.

Operational Review

LTA's Senior Management convene weekly to discuss and review strategies, programmes and projects. At the Group level, there are also various forums for monitoring and reviewing the status of operations and the progress of projects on a regular basis.

Evaluation & Improvement of Strategic Planning Process

LTA's strategic planning process is continuously reviewed to enhance the quality of our strategic thinking and learning process. There are three key triggers to the review of the strategic planning process.

They are:

- Developments in overall government initiatives or other government agencies which might affect how and/or when we obtain the necessary inputs for feeding into the review of our desired outcomes, deliverables and strategies;
- Feedback from staff which may indicate potential improvements to the strategic planning process; and
- Survey of strategic planning tools in the market which may result in an improvement in the methodology and process for strategic planning.





Information

“Such pricing has already existed for three decades. Much can be learned from Singapore’s experience....Nevertheless, Singapore has clearly been road pricing’s world leader.”

- Gregory B Christainsen – “Road Pricing in Singapore after 30 Years”

“LTA has implemented a comprehensive inter-modal policy and strategy, which is unique by its comprehensive domain over all modes of urban transport. Going forward, the public transport system design should be focused on the commuters having the most convenient and seamless journey experience.”

- Professor Vukan Vuchic, UPS Foundation Professor of Transportation Engineering in City and Regional Planning



LTA's strive towards excellence in information management is evident in the local and international awards we have won. Awards such as FileNet Innovation Award , International Association of Public Transport (UITP) Youth Award and the recent ESRI Special Achievement in GIS Award 2008 are testimonies of LTA's high value-add and innovative solutions to enhance Singapore's land transport system.

Management of Information

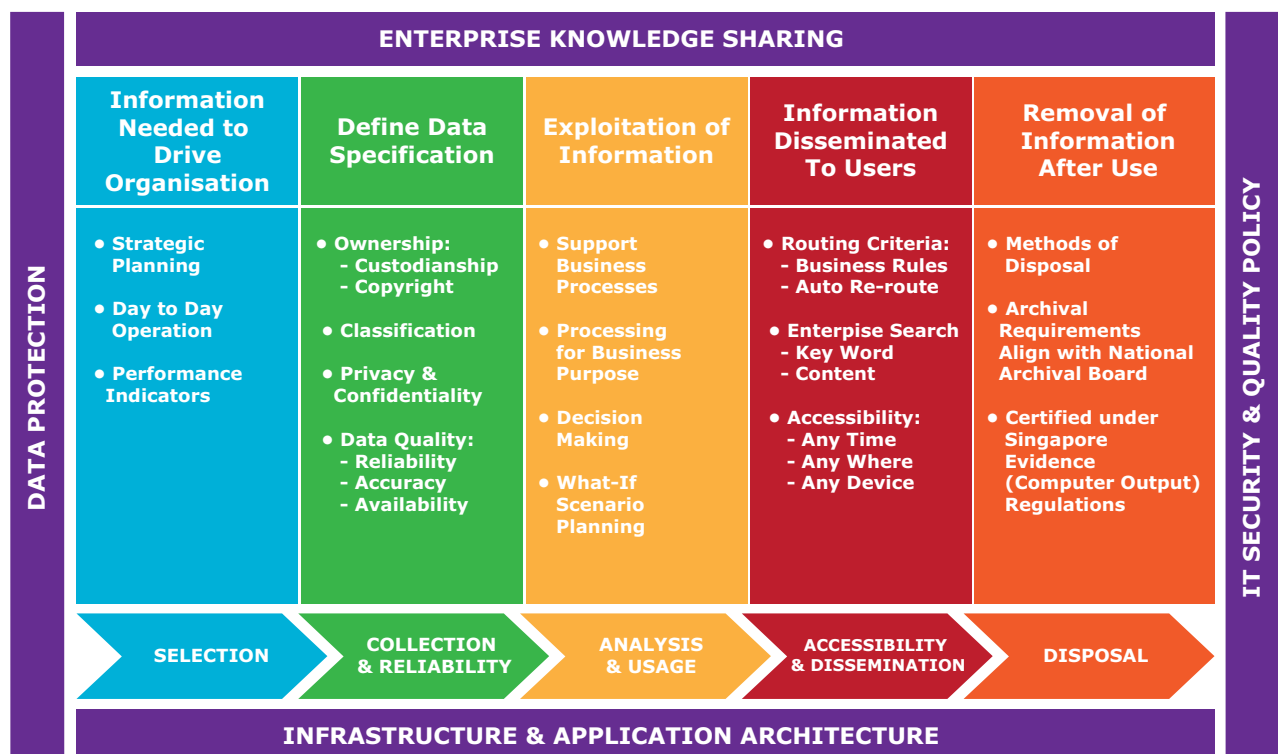
Information is critical to our operational excellence. LTA manages its information with a systematic process of selecting, collecting, analysing and disseminating information to meet business strategic goals and to achieve outcomes of internal efficiency and external agility.

The information captured is further built upon existing knowledge over time. This has created new learning opportunities, knowledge sharing and extended personal growth for staff.

To ensure that information is reliable and accessible, LTA has put in place comprehensive processes to protect the information infrastructure and ensure the resiliency of business operations.



Reliability Ring



Information Management Framework

Information Accessibility and Dissemination

Information is made accessible and disseminated promptly to LTA Stakeholders, Customers, Partners & Suppliers, and Employees. Among the wide array of information dissemination channels, the following are some innovative channels we adopt.

LTA Management Dashboard

An innovative application for the management to monitor information accessibility.

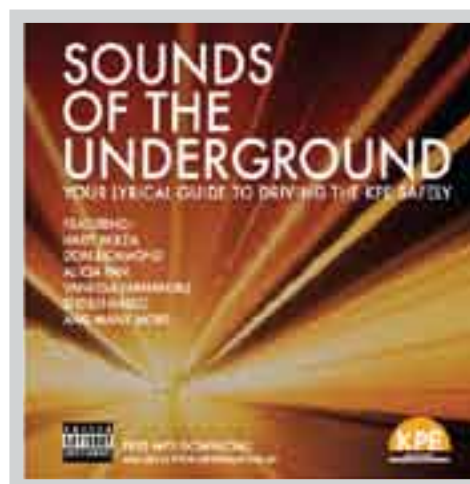


Land Transport Operations Centre (LTOC)

The LTOC and the new Crisis Command Centre are set up to support Senior Management in overall transport optimization.

KPE Publicity

The Underground Radio, Music Album, Graphic Art on hoardings, Tunnel Discovery are some of the unconventional communication channels we use to reach out to the masses.



Internet Portals

In line with Singapore Public Service's vision that, where possible, all public services should be made available electronically by end 2001, LTA embarked on the formation of our e-Services masterplan in early 1999.

Positioned to "dot.com" the land transport industry in Singapore, ONE.MOTORING portal is a comprehensive one-stop portal for a host of services provided by LTA and other related websites. This portal has since attracted over 11 million visitors.

PublicTransport@SG is a one-stop public transport portal which provides information covering all public transport operators. Starting October 2008, public transport commuters, including tourists, need only visit one website, PublicTransport@SG (www.publictransport.sg), to access reliable and up-to-date public transport-related information. This initiative will help make public transport a choice mode, by making it easier for commuters to plan their journeys.

Call Centre

The One Call Centre (1800-CALL LTA) where the public can dial a single number for all their enquiries and feedback. With an Interactive Voice Response System, customers' experiences are enhanced by effectively screening calls of routine nature and offering immediate advice or solutions.

Interactive Games

Capitalising on the growing youth gaming culture and lifestyle in Singapore and gaming's edutainment potential, an eGame targeted at reaching out to students between the ages of 10 to 14 was conceptualised. Through the VR-10 eGame, students are educated about the interesting and seldom-known facts about Singapore's land transport system. The game successfully reached out to 348 Primary & Secondary Schools.



LTA challenges and at the same time, educates the public with The Great Transport Challenge 2020 on the intricate policy trade-offs one has to make concerning land transport matters in a simple, interactive and fun way.

Expressway Monitoring and Advisory System (EMAS) and Junction Electronic Eyes (J-Eyes) System

We leverage on technology to monitor traffic conditions to optimise road capacity and provide real-time traffic information to motorists.

BusAIS

BusAIS uses wireless technology to inform commuters when the next two buses on a given service are arriving. The information is displayed on panels located inside bus shelters, and is refreshed every minute. This system enhances the overall travel experience of commuters by better managing their expectations and waiting time, allowing them to make more informed travel decisions quickly and efficiently.

SMS 77LTA

Short message services and other mobile applications services enable the public to access traffic and transport related information anytime, anywhere.



Face-to-Face

The setting up of the Community Partnership Division is a testament to our commitment to engage the community in developing our land transport system. Community Partnership Officers engage the grassroots and residents regularly, convey their feedback to the subject matter experts in LTA, monitor and inform the stakeholders upon implementation or completion of their requests.





Prints and Publications

In-house magazines and annual reports keep staff updated with the latest news and events. LTA's project brochures are also made available to the public.

Knowledge Management (KM) @ LTA

The KM initiative in LTA promotes the sharing of knowledge to cultivate innovation in order to sustain and deliver leading-edge solutions to our customers. Various initiatives were adopted aligned to the following thrusts:

Building the Knowledge Community

- LTA Academy – one-stop point for governments, organisations and professionals around the globe to exchange know-how and best practices related to land transport management and development.
- Memorandum of Co-operation (MOC) - Forging ties with partners, LTA signed a MOC with Transport for London, the integrated body responsible for the transport system in London.
- Learning at the enterprise level - To augment face-to-face community activities, talks and knowledge-sharing sessions were organised internally to share knowledge, lessons learnt and experiences gained through various projects done.

Nurturing an Environment of Knowledge Sharing

- LTA Employee Access Portal – an enterprise intranet system that was designed as a one-stop and staff-centric platform to connect all members in LTA.

- One-stop Retrieval InfoBank InTerchange (ORBIT) – an enterprise infrastructure to organise, manage, and store all document types into a central repository.



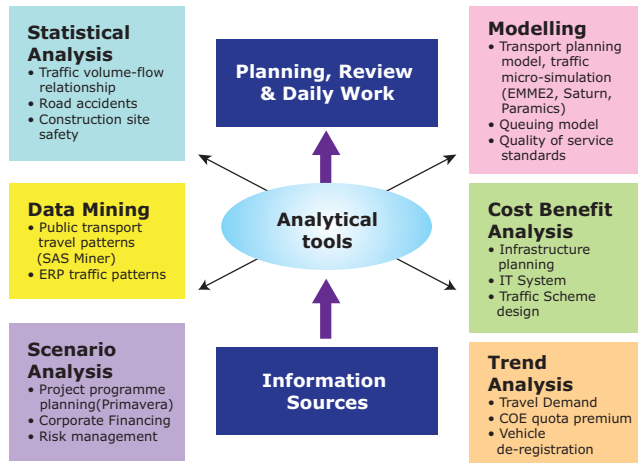
Embracing Innovation

- In LTA, we adopt a pragmatic and collaborative approach to foster innovativeness.
- LTA views innovation as a core competency and structured plans are in place to develop it strategically. Clearly-defined training and development plans are rolled out to nurture innovative skills so that each individual becomes a new source of innovation.



Analysis and Review

LTA deploys various analytical tools and techniques to analyse information for organisational planning and to efficiently respond to market changes and opportunities which drive business transformations.



Analytical tools for information

Evaluation and Improvement

The Senior Management evaluates the information management framework annually at the Corporate Retreat. Performance Indicator results are reviewed together with strategic projections of the coming year to identify improvements to the various information management systems.

LTA constantly seeks to build a long-term relationship with stakeholders, partners, customers and employees so as to garner valuable feedback for the evaluation and improvement of the information management process.

Comparison & Benchmarking

Closely aligned to our Strategic Thrusts, LTA adopts comparative analysis and benchmarking throughout the organisation. This enables us to assess our current performance level and learn from best practices. By embarking on comparative and benchmarking studies systematically, continuous improvements and innovation excellence are attained.

One outcome of our benchmarking efforts would be the Land Transport Master Plan. The review of our land transport system features benchmarking studies against world cities that are rated high and comparable to Singapore in size and economic development were selected for the benchmarking. The learning from best practices around the world contributed significantly to the development of strategies that makes our land transport system world class and more people-centric.

Comparative information and benchmarking activities are monitored at management meetings and forms part of our Planning process. The Senior Management also regularly evaluates and reviews the methodology of the benchmarking activities. This is to ensure that our benchmarking efforts are channeled to fulfill our Mission and Vision, enabling the management to focus on improvements that are most crucial to land transport and organisational development.





People

“A team from LTA called the “Hard Hats” worked together to reduce noise pollution in construction sites by 4 decibels, or actually 23%, by focusing on the root of the problem, which turned out to be the drills themselves! It is a celebration of the spirit of ExCEL, a celebration that we, as a Public Service, can progress and become better.”

- Keynote Address by Mr Peter Ho, Head Civil Service at PS21 ExCEL Convention 2007



Human Resources Planning

The Human Resource Planning in LTA is guided by our organisational direction, driven by LTA's mission, Vision and 4 Strategic Thrusts. The HR Planning also factors in our organisational needs arising from corporate work plans and other transport strategies, such as those arising from the Land Transport Review.

The HR Planning not only takes its cue from strategic sources, but from our in-house reviews as well. For instance, Employee Opinion Survey (EOS) and 360° Feedback are rich sources for us to tap on staff and management views as inputs for HR Planning.

For our Strategic Thrust 4, "Create Value and Instil Pride in Our Work", we adopted a two-pronged approach:

- **Management Strategy**

To devote time and resources to management-staff relations as we move towards a people-centric culture.

- **HR Strategy**

To attract, retain and groom our people so as to pave the way for a positive employment experience in a people-centric culture.

With the above, our resulting HR strategy is driven by the focus on Human Capital, Total Rewards and Staff Partnership.



- **Human Capital**

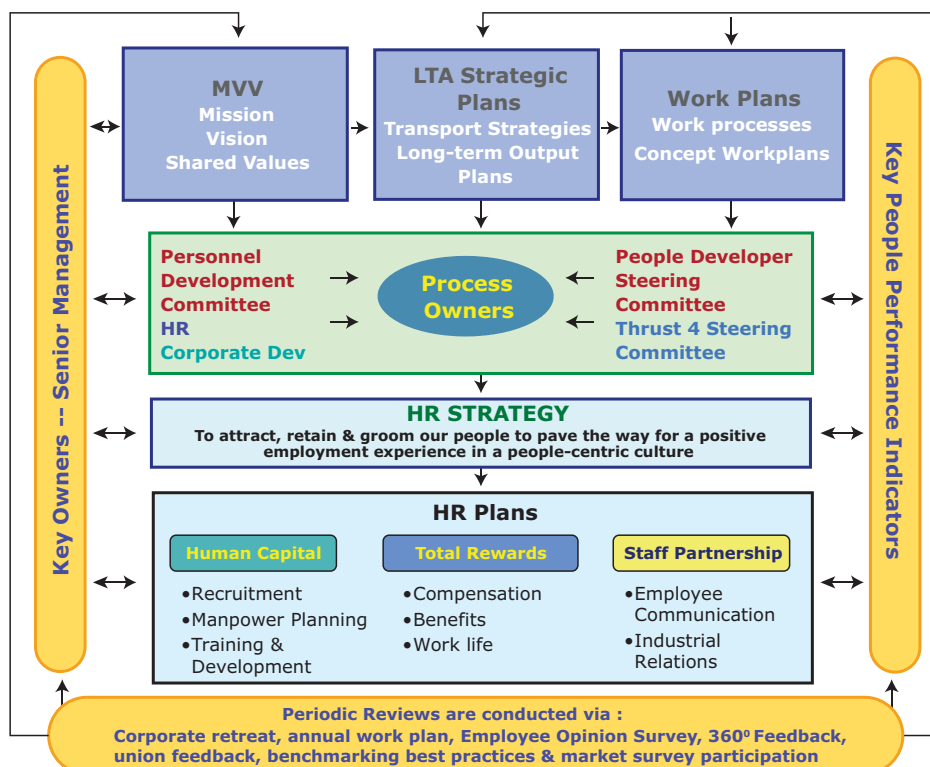
To implement effective hiring and selection strategies, groom our staff to meet their professional growth and corporate goals.

- **Total Rewards**

To provide a market-competitive remuneration and benefits package to attract and retain good staff.

- **Staff Partnership**

To enhance staff organisational awareness and management-staff dynamics at the organisational level.





Employee Involvement & Commitment

In LTA, we aim to foster an open environment where we nurture a culture of affirmation and recognition for staff that encourages the promotion of innovation and continuous drive to streamline work processes.

As such, we adopt a multi-level “inclusive” employee involvement strategy for innovation, teamwork and achievement of corporate goals and objectives. The following are the various mechanisms set up to promote and encourage involvement and commitment from staff at various levels:

- **Strategic Level**

Staff participate in steering and corporate committees where they can contribute ideas that are used in the formulation of corporate strategies.

- **Operational Level**

Staff contribute in cross-functional committees to plan and implement corporate events and projects.

- **Individual Level**

eIDEA is a bottom-up mechanism that provides an avenue for staff’s contribution of quality suggestions that can lead to innovative solutions in their workplace. It is built on the concept that every individual counts, and that each and every staff has the power to contribute ideas that could lead to improvements in work processes.

QuEST (Quest for Excellence Search Teams), our inhouse brand name for Work Improvement Teams, aims to foster an environment of continuous improvement, and to energise LTA staff into a thinking, enthusiastic workforce.

Employee Education, Training & Development

LTA values the importance of nurturing and developing every staff. Therefore, we place strong emphasis on staff engagement through learning and development. The learning is based on a competency model, where core competencies are mapped out to support LTA’s Mission, Vision and Strategic Thrusts at the corporate and group level.

As innovation is a culture and way of life in LTA, we map out staff’s training needs to IPAM’s “Hands of Innovation framework”. Innovation training courses and events are identified to cater to the needs of different levels of staff and provide them with opportunities to generate innovative ideas.





Talent management framework is also in place to ensure that we continue to attract, identify, develop and retain talents to groom successors for key positions.

Employee Health & Satisfaction

In order to achieve a people-centric working environment, a balanced approach is adopted. Policies, Health Practices and Work Environment forms the basis of our Workplace Health Promotion (WHP) programme to enhance the overall health and well-being of our staff.



To complement the Health and Well-Being Framework, we segment our initiatives into the following aspects:

- **Mind** – contributes to the intellectual and mental well-being of staff.
- **Heart** – contributes to showing care and concern for staff.

- **Body** – contributes to the health and physical well-being of staff.

Reviews are also done through various channels and measurements are tracked to identify areas for improvements.

Employee Performance & Recognition

LTA adopts an open appraisal system to facilitate in-depth discussion of the officers' performance and development opportunities, a structured two-way communication between staff and their supervisors. There are also a variety of monetary and non-monetary rewards in place to reward and give recognition to our staff.





Processes

“This score represents a significant improvement in LTA’s safety performance. This is testament to the LTA’s commitment toward achieving zero incidents... the LTA is doing many things well to achieve world-class safety standard.”

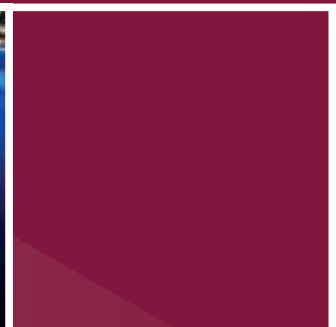
- Mr Samuel Tso, Business Director, ASEAN, DuPont Safety Resources, on LTA’s significant improvement in Dupont Safety Audit 2007.

“Land Transport Authority – Singapore has shown a commitment to protecting the health and well-being of its employees and others. We hope other businesses and organisations will follow its lead and strive for continuous improvement in health and safety management.”

- David Rawlins, RoSPA Awards Manager, on LTA winning the prestigious RoSPA Occupational Health and Safety Awards 2008.

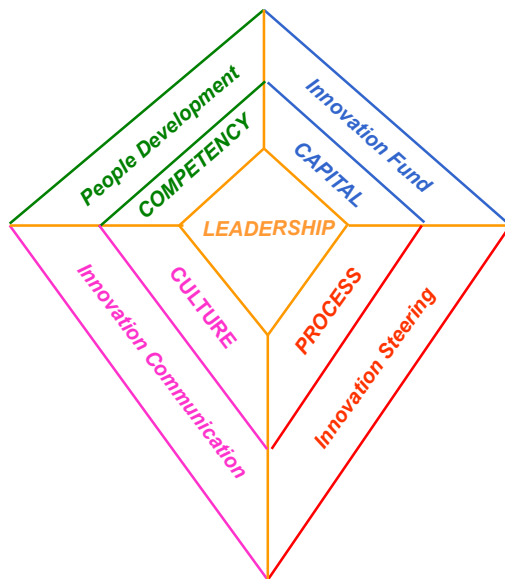
“In a taste of the future, Singapore, which has dabbled in congestion pricing perhaps longer than any city, is working with I.B.M. and others to develop technology that will predict traffic up to an hour in advance.”

– 16 Mar 08 New York Times article positioned Singapore as a trend setter on managing traffic congestion



Innovation Processes

Undergirding the innovation drive in LTA is leadership. LTA's Senior Management is committed to make innovation a part of the organisation culture. Innovation is the enabler to achieve organisational excellence and Competence (Innovation) is one of LTA's six Shared Values. To support this, LTA has an Innovation Framework to permeate a culture of innovation throughout the organisation. Our Innovation Excellence Framework is made up of 5 facets: Leadership, Process, Culture, Competency and Capital, as shown below.



Innovation Excellence Framework

Innovation Committees

Each facet of the Innovation Excellence Framework is spearheaded by an Innovation Committee with Leadership at the core. The Innovation Steering Committee leads and drives innovation process to ensure that LTA's innovation strategies and programmes are aligned with our Mission and Vision, and all innovative ideas conceived are effectively and systematically implemented.

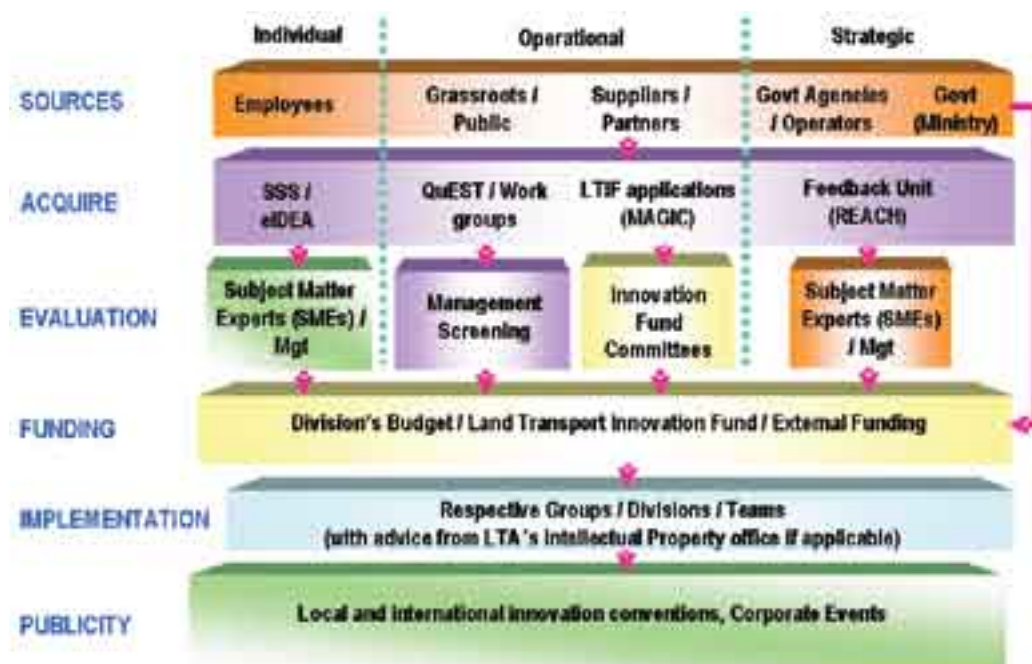
Structured Innovation Process

We promote creative thinking as part and parcel of our daily work. Ideas can be conceptualised anytime and anywhere. LTA has a structured innovation process to capture ideas from various sources and develop them into implementable outcomes by managing their entire life-cycle commencing from conception to implementation and dissemination. This is illustrated in diagram below.

At LTA, we believe every idea deserves the opportunity to be nurtured. Thus, we also have processes in place to prevent premature termination of ideas. Funds are available for staff to tap on if ideas require capital for enhancement and implementation.

Land Transport Innovation Fund

The Land Transport Innovation Fund (LTIF) was set up to facilitate collaboration and innovation partnership with the industry. The fund aims to accelerate the



Structured Innovation Process



Land Transport Innovation Fund Portal

development of innovative ideas and the adoption of strategic technologies to meet LTA's mission of providing a people-centred land transport system. To date, we have funded more than 50 projects.

To further build on this successful partnership, Minister for Transport and Second Minister for Foreign Affairs, Mr Raymond Lim announced the launch of LTA's Land Transport Innovation Fund for industry-driven R&D projects during the Land Transport Excellence Awards Presentation Ceremony 2008.

Risk Management Process

As changes bring about risks, LTA has an Enterprise Risk Management framework to mitigate risks. Through this process, major risks are identified and assessed with the development of control measures. Like any feedback system, the control measures and results are monitored on a regular basis for continual improvement.

Involving Our Suppliers & Partners

We work closely with our suppliers and partners on innovative projects to deliver value-added services



Land Transport Excellence Awards 2008



Enterprise Risk Management framework

and achieve breakthroughs in performance. One example would be LTA's collaboration with IBM on the development of the traffic prediction tool. This expanded and improved our range of traffic management tools to keep traffic smooth flowing. Our continuous effort to look for innovative new solutions was recognised through the conferment of the National InfoComm Award 2008, the highest accolade for InfoComm Innovation in Singapore.

Singapore's First Formula One Race

LTA also worked closely with the multiple agencies involved in the preparation for the Inaugural Formula 1 SingTel Singapore Grand Prix in September 2008.

While most of the race preparation was completed prior to September 2008, the final pieces of the essential race infrastructure including more than 500 pieces each of concrete barriers and debris fencing, spectator and perimeter fencing spanning the entire circuit, 16 grandstands and six temporary pedestrian overhead bridges needs to be assembled on site in the week prior to the race.

In scheduling the traffic management plan, road diversions and closures were effected as late as possible to minimise inconveniences to road users. To facilitate business continuity during this time, access to closed roads was granted to authorised vehicles with accredited access labels.



Picture courtesy of www.boston.com



Results

"...it's amazing how most of the roads are flowing pretty freely even during the peak hours."

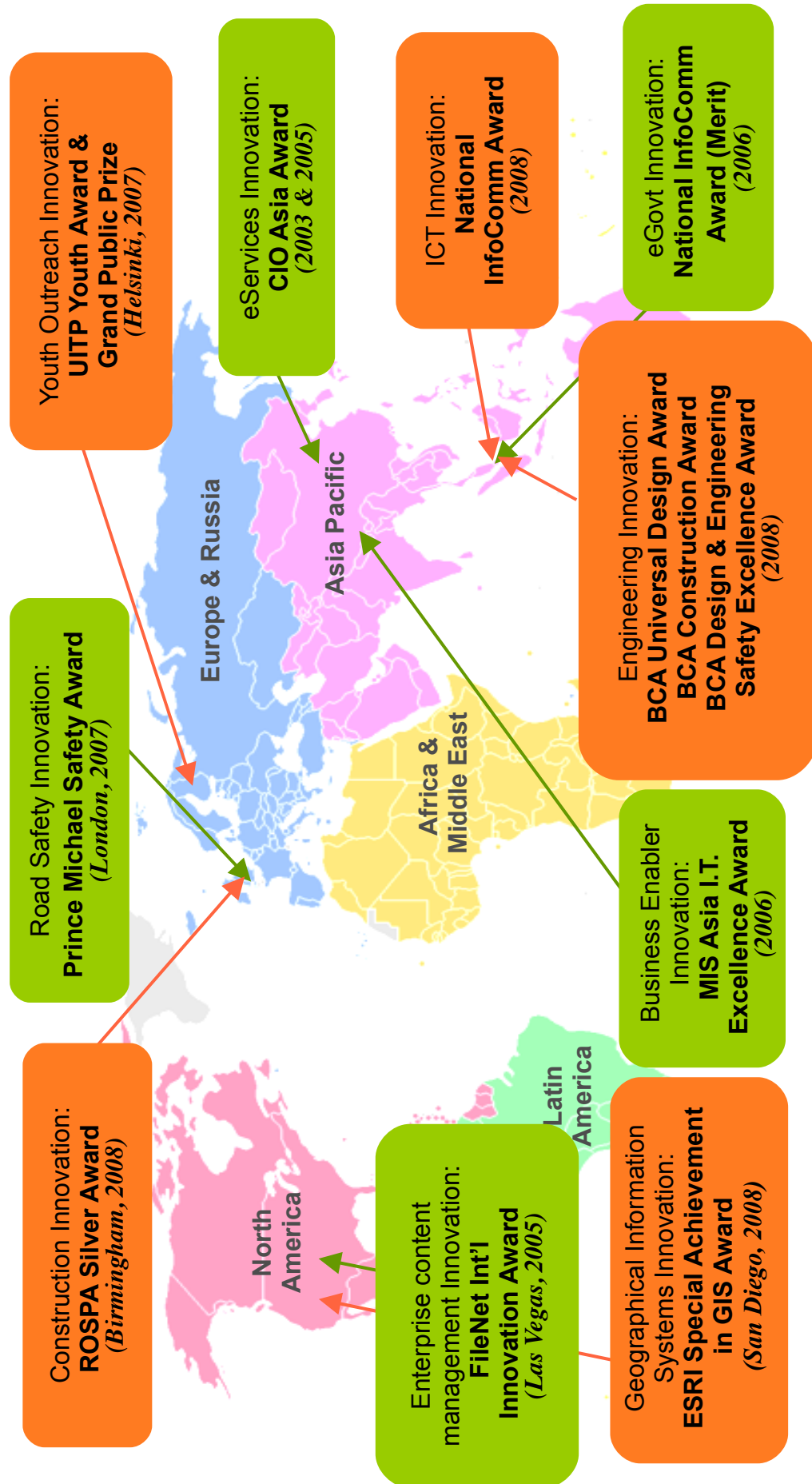
– Professor Alan Altshuler, Urban Planning Specialist of Harvard University United States

"The improvements have made a real difference to the daily lives of our residents, in seemingly small, but very meaningful ways... they show it by the smiles on their faces."

– Minister Teo Chee Hean, MP for Pasir Ris-Punggol GRC, commending LTA's Land Transport Community Partnership Division's efforts



International Recognition for Innovations@LTA



CUSTOMER RESULTS

Customer satisfaction surveys conducted from 2000 to 2007 have shown an upward trend in the overall satisfaction with the land transport system and LTA services as reflected in Figures 1 and 2.

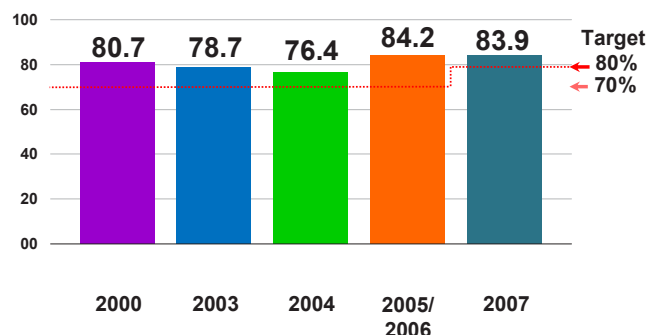


Figure 1 Customer Satisfaction with Land Transport System

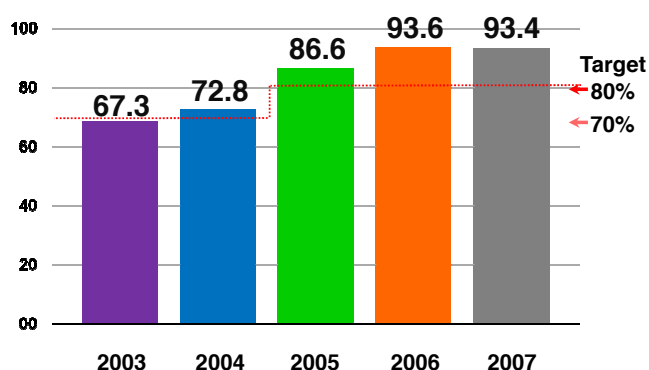


Figure 2 Customer Satisfaction with LTA services

Figure 3 below shows that overall customer satisfaction with our public transport system has increased over the past 2 years.

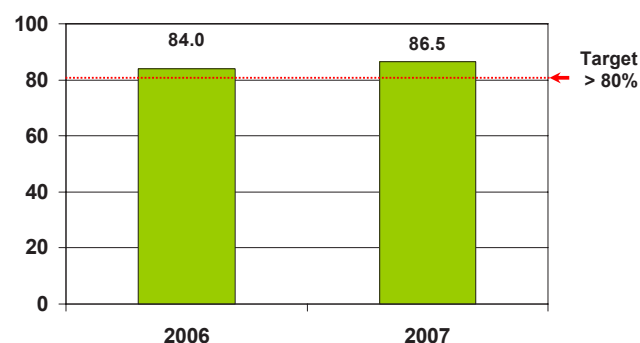


Figure 3 Overall customer satisfaction with public transport system

The increasing number of page views, unique visitors and customer satisfaction of ONE.MOTORING attest to the popularity and usefulness as reflected in Figures 4 - 6.

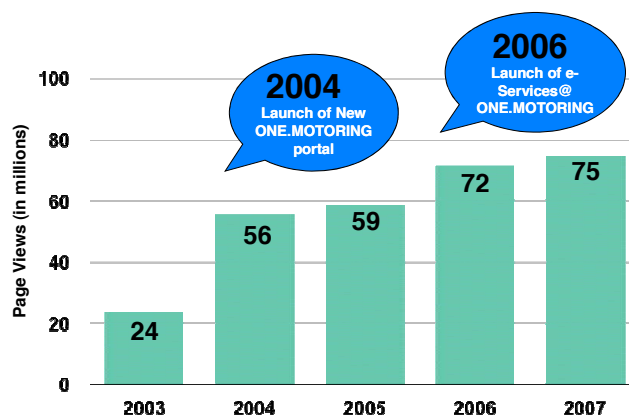


Figure 4 Page views of ONE.MOTORING portal

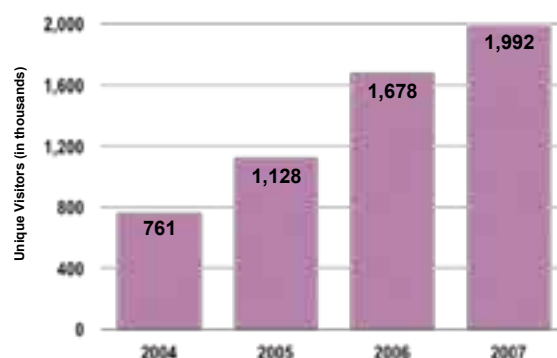


Figure 5 Unique visitors to ONE.MOTORING portal

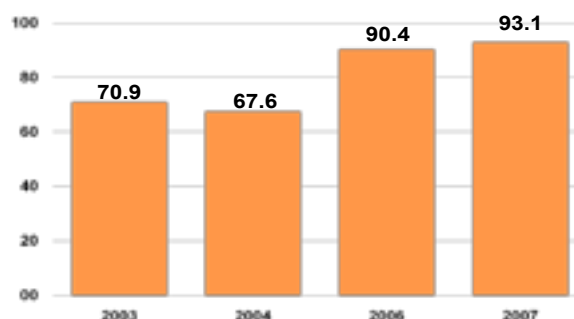


Figure 6 Customer satisfaction of ONE.MOTORING portal

MARKET RESULTS

The IMD World Competitiveness Yearbook (WCY) analyses and ranks the ability of nations to create and maintain an environment that sustains the competitiveness of enterprises. The WCY relies strongly on hard statistical data. Hence, the yearbook is more than just a survey. Singapore has been securing the 2nd place for the past 3 years.

WCY Indicators	2001	2002	2003	2004	2005
Roads	2nd	2nd	2nd	2nd	2nd
Railroads	3rd	3rd	2nd	2nd	2nd

Figure 7 Singapore's ranking for roads and railroads infrastructure

Singapore ranked top with 24.8km/hr traffic speed during the morning peak in the Central Business District Area. This is the positive result of the adoption of a variety of congestion management tools.

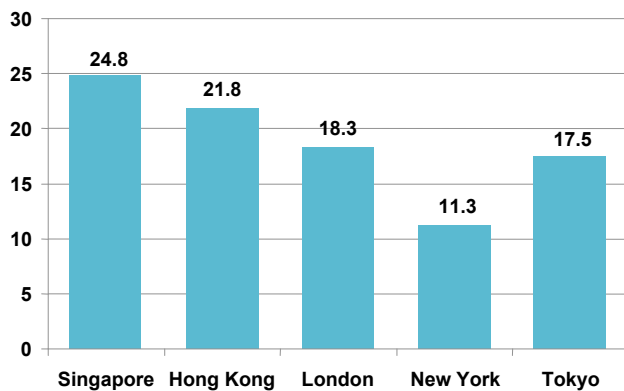


Figure 8 Average traffic speed comparison

Singapore also holds the record at 18.9km/hr for average bus speed. This is the result of traffic management measures like the bus priority systems.

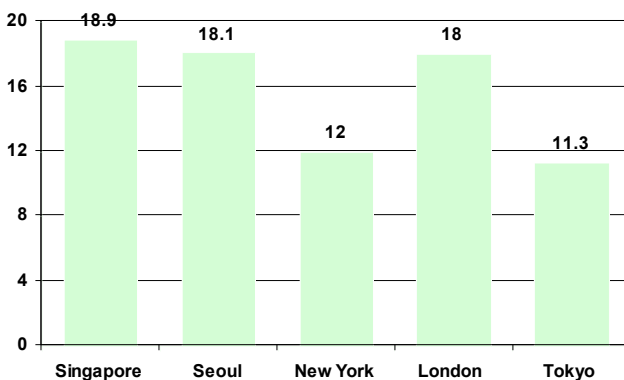


Figure 9 Average bus speed

Singapore also has one of the lowest door-to-door journey time at 36.8min.

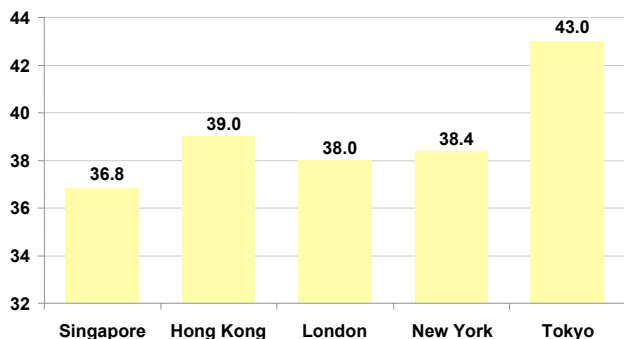


Figure 10 Average door-to-door journey time

PEOPLE RESULTS

eIDEA and QuEST are important channels to motivate staff to innovate and engage in teamwork.

Both the eIDEA acceptance and implementation rates have been improving consistently with reviews to better recognise and encourage staff suggestions. We have also attained 100% QuEST participation rate.

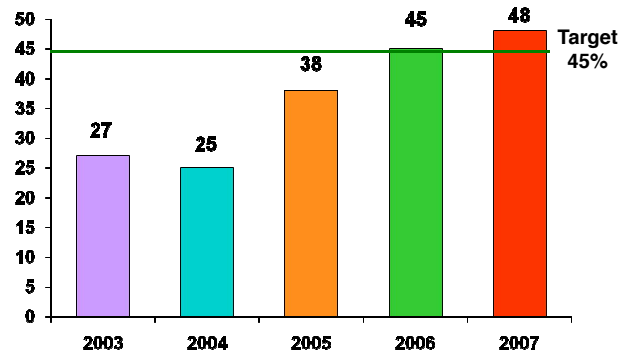


Figure 11 eIDEA acceptance rate

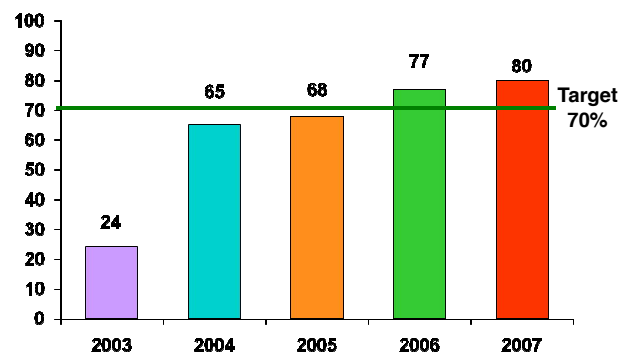


Figure 12 eIDEA implementation rate

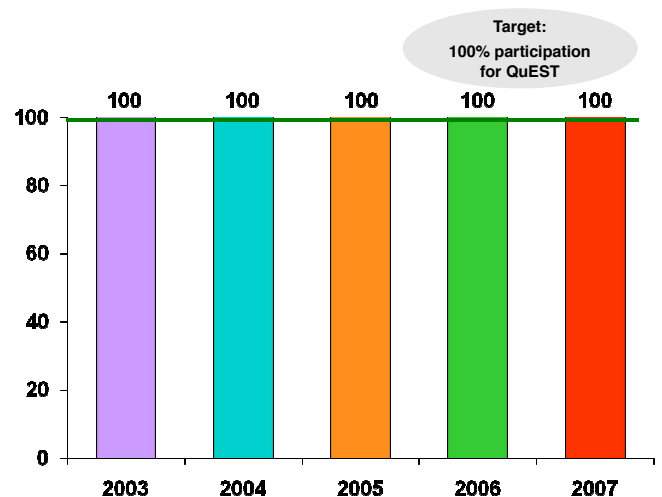


Figure 13 QuEST participation rate

In the results of a survey (Figure 14) done with our staff in 2008 on LTA's six shared values, staff ranked innovation high among the shared values they practice during their course of work.

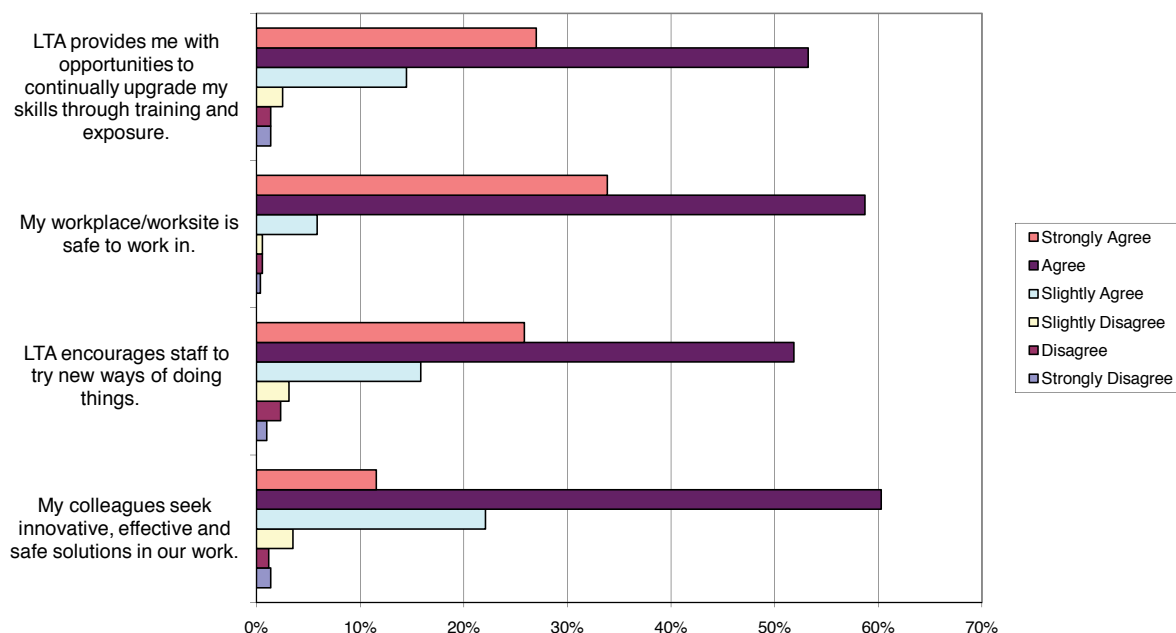


Figure 14 Competence – Forward Looking, Dare to be Different

OPERATIONAL RESULTS

Our QuEST teams' efforts in innovation shone through with the number of NIQC Star and Gold Awards garnered throughout the years. Their results are commendable as only the top 2.5% of WITs in Singapore achieve the Star Award.

Year	National Innovation & Quality Circles (NIQC) Awards				
	Star	Gold	Silver	Bronze	Total
2004	0	5	7	7	19
2005	2	7	11	4	24
2006	0	12	10	1	23
2007	2	8	14	0	24
2008	2	12	10	0	24

Figure 15 Results of NIQC

As shown in Figure 16, average daily public transport journeys, at 3.27 million in 2006, increased by 4.1% from 3.14 million journeys in 2005. This was a great achievement compared to a growth rate of only 1.25% in 2005.

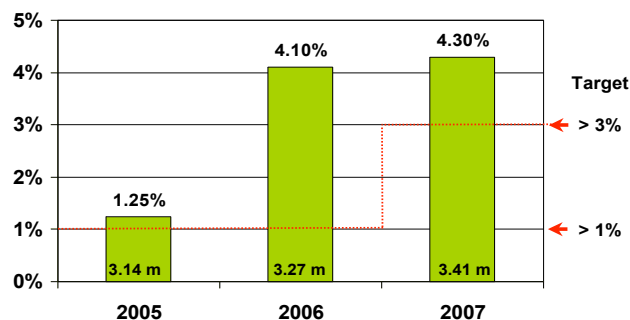


Figure 16 Growth in daily public transport journeys

Figure 17 shows that we have met our target of 85% of expressways and arterial roads that are congestion free over the last 5 years.

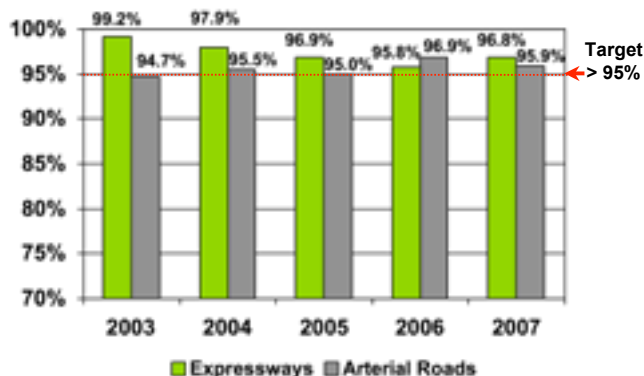


Figure 17 Percentage of expressways and arterial roads that are congestion free

Figure 18 shows the number of Rapid Transit System (RTS) projects implemented since 2002, and the total length of rail to date. Today, we have 138.2km of rail, which will be doubled to 278km in 2020 with the completion of Circle Line, Downtown Line, Thomson Line, Eastern Region Line, North-South and East-West Line extensions.

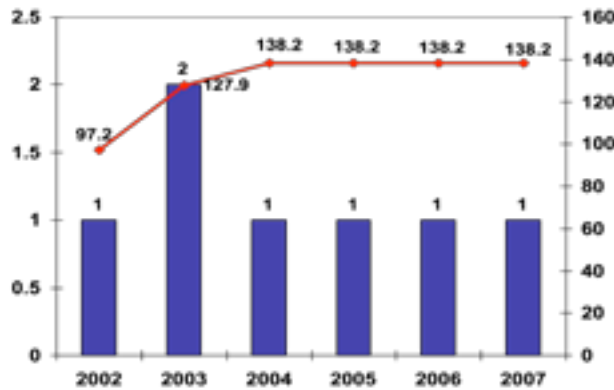


Figure 18 No. of new RTS projects implemented/length of rail (km)

Figure 19 shows the number of new road projects completed since 2004, and the length of roads added to our road network by these projects.

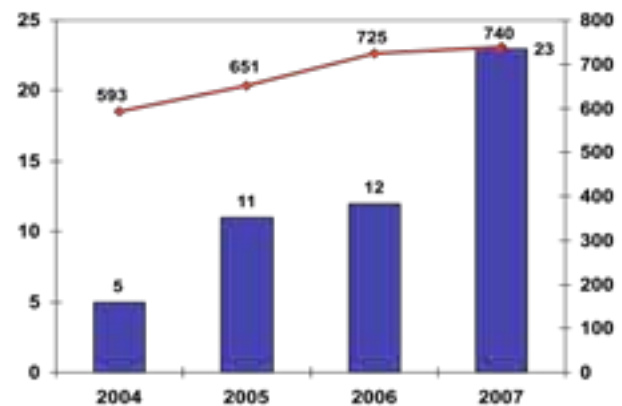


Figure 19 No. of new road projects implemented/length of roads (lane-km)

In 2003, LTA engaged DuPont Safety Resources to assess our Occupational Health & Safety Management System (OHSMS), as a benchmark to other world class performers in construction. Then, we only received a score of 2.3 out of 5. In 2007, we scored 3.7 out of 5 (Global Excellence Level), far surpassing the world's construction average rating of 2.5

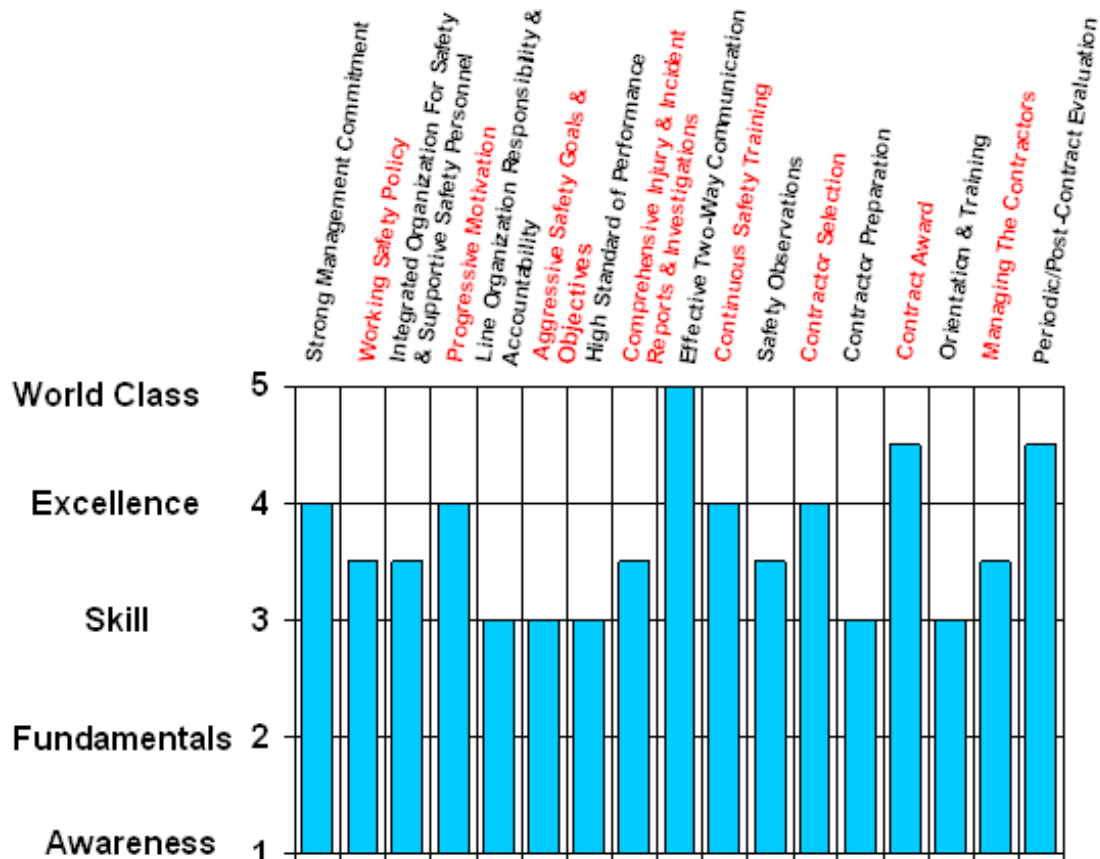


Figure 20 Score for DuPont Safety Assessment 2007

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Websites:

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