

Sveučilište u Zagrebu
Fakultet prometnih znanosti

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Nastavni materijali iz kolegija Engleski jezik 1
(1. semestar preddiplomskog studija)

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Predgovor

Nastavni materijali iz kolegija Engleski jezik I namijenjeni su studentima prvog semestra preddiplomskog studija Fakulteta prometnih znanosti Sveučilišta u Zagrebu i izrađeni su u skladu s nastavnim planom. Na Fakultetu prometnih znanosti studenti pohađaju nastavu engleskog jezika kao izbornog kolegija kroz prva četiri semestra preddiplomskog studija.

Cilj je kolegija Engleski jezik I usvojiti temeljna znanja i jezične vještine, usvojiti vokabular struke iz područja prometa i logistike na razini B1 te razviti komunikacijske sposobnosti. Cilj je i razviti kompetencije studenata za usmeno i pisano razumijevanje i izražavanje na engleskom jeziku koristeći stručnu terminologiju. Cilj kolegija također je potaknuti studente na samostalno jezično učenje uz pomoć tiskanih i elektroničkih izvora.

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1. Logistics

PRE-READING EXERCISE

Before reading the text, write down 5 words you believe are associated with the term “logistics”. Discuss in pairs.

Logistics

Origins and definition

According to the Council of Supply Chain Management Professionals logistics is the process of planning, implementing and controlling procedures for the efficient and effective transportation and storage of goods including services and related information from the point of origin to the point of consumption for the purpose of conforming to customer requirements and includes inbound, outbound, internal and external movements.

Logistics activities and fields

A basic distinction in the nature of logistics activities is between inbound and outbound logistics. Inbound logistics is one of the primary processes of logistics, concentrating on purchasing and arranging the inbound movement of materials, parts, and/or finished inventory from suppliers to manufacturing or assembly plants, warehouses, or retail stores. Outbound logistics is the process related to the storage and movement of the final product and the related information flows from the end of the production line to the end user. Given the services performed by logisticians, the main fields of logistics can be broken down as follows:

- Procurement logistics
- Distribution logistics
- After-sales logistics
- Disposal logistics
- Reverse logistics
- Green logistics
- Global logistics
- Domestic logistics
- Concierge Service
- RAM logistics
- Asset Control Logistics
- POS Material Logistics
- Emergency Logistics
- Production Logistics

Procurement logistics consists of activities such as market research, requirements planning, make-or-buy decisions, supplier management, ordering, and order controlling.

Distribution logistics has, as main tasks, the delivery of the finished products to the customer. It consists of order processing, warehousing, and transportation.

Disposal logistics has as its main function to reduce logistics costs and enhance services related to the disposal of waste produced during the operation of a business.

Asset Control Logistics takes care of the assets required for the display, preservation, promotion of products. Some examples are refrigerators, stands, display monitors, seasonal equipment, poster stands & frames.

Production logistics aims to ensure that each machine and workstation receives the right product in the right quantity and quality at the right time. The concern is not the transportation itself, but to streamline and control the flow through value-adding processes and to eliminate non-value-adding processes.

Business logistics

One definition of business logistics speaks of "having the right item in the right quantity at the right time at the right place for the right price in the right condition to the right customer". The term "business logistics" has evolved since the 1960s due to the increasing complexity of supplying businesses with materials and shipping out products in an increasingly globalized supply chain, leading to a call for professionals called "supply chain logisticians". The main functions of a qualified logistician include inventory management, purchasing, warehousing, transportation, consultation, and the organizing and planning of these activities. Logisticians combine a professional knowledge of each of these functions to coordinate resources in an organization.

Nodes of a distribution network

The nodes of a distribution network include:

- Factories where products are manufactured or assembled
- A depot or deposit is a standard type of warehouse for storing merchandise (high level of inventory).
- Distribution centres are for order processing and order fulfilment (lower level of inventory) and also for receiving returning items from clients.
- Transit points are built for cross docking activities, which consist in reassembling cargo units based on deliveries scheduled (only moving merchandise).
- Stores such as traditional retail stores, modern supermarkets, hypermarkets, discount stores or also voluntary chains, consumer cooperative, groups of consumer with collective buying power. Note that subsidiaries will be mostly owned by another company and franchisers, although using other company brands, actually own the point of sale.

Handling and order processing

Order processing is a sequential process involving: processing withdrawal list, picking (selective removal of items from loading units), sorting (assembling items based on destination), package formation (weighting, labeling and packing), order consolidation (gathering packages into loading units for transportation, control and bill of lading). Picking and sorting can be both manual and automated. Especially for very long distances, product transportation will likely benefit from using different transportation means: multimodal transport, intermodal transport (no handling) and combined transport (minimal road transport).

Logistics outsourcing

Third-party logistics (3PL) involves using logistics service providers (LSP) to execute logistics activities that have traditionally been performed within an organization itself. The concept of a fourth-party logistics (4PL) provider assembles the resources, planning capabilities, and technology of its own organization and other organizations to design, build, and run comprehensive supply chain solutions. Whereas a 3PL service provider targets a single function, a 4PL targets management of the entire process. Some have described a 4PL as a general contractor that manages other 3PLs, truckers, forwarders, custom house agents, and others, essentially taking responsibility of a complete process for the customer.

(Taken and adapted from Wikipedia, <https://en.wikipedia.org/wiki/Logistics>, 01.09.2017)

TEXT AND VOCABULARY EXERCISES

1) *Translate these key terms from the text into Croatian.*

- **inbound logistics**
- **outbound logistics**
- **procurement logistics**
- **distribution logistics**
- **production logistics**
- **supply chain**
- **distribution center**
- **order processing**
- **warehousing**
- **transportation**

2) *Explain these terms from the text.*

Logistics:

Inbound logistics:

Outbound logistics:

Business logistics:

3) *Find the words in the text that mean the following.*

- _____ It consists of activities such as market research, requirements planning, make-or-buy decisions, supplier management, ordering and order controlling.
- _____ It has, as its main task, the delivery of finished products to the customer.

- _____ It aims to ensure that each machine and workstation receives the right product in the right quantity and quality at the right time.
- _____ Selective removal of items from the loading units.
- _____ Assembling items based on destination.

4) *Answer the questions about the text.*

Name at least 4 main fields of logistics?

What do nodes of a distribution network include?

What is a third-party logistics (3PL)?

What is a fourth-party logistics (4PL)?

5) *Choose one of the video clips and report about the logistics in that sector. Which people, equipment and facilities are involved? What does the process look like? What are the main challenges? What are the solutions?*

Anatomy Of A F1 Team: Logistical Challenge

https://youtu.be/z-Rw_lbd1iE

London Heathrow T5 baggage handling

<https://www.youtube.com/watch?v=Wn8qogHH9bM>

How Amazon manages 35 orders a second

<https://www.youtube.com/watch?v=LsEsuJhg660>

2. New urban mobility

PRE-READING EXERCISE

Before reading the text, discuss the following statements in groups of 3. Do you agree or disagree? Explain.

1. Using cars for the journeys in the city represents a huge waste of energy and space and causes the aggravation of parking and traffic.
2. Intelligent transport systems implementation in public transport systems would generate more users.
3. Recent taxi services such as Uber are changing the nature of mobility within the city.

End of the car age: how cities are outgrowing the automobile

Cities around the world are coming to the same conclusion: they'd be better off with far fewer cars. So what's behind this seismic shift in our urban lifestyles?

Gilles Vesco calls it the "new mobility". It's a vision of cities in which residents no longer rely on their cars but on public transport, shared cars and bikes and, above all, on real-time data on their smartphones. He anticipates a revolution which will transform not just transport but the cities themselves. "The goal is to rebalance the public space and create a city for people," he says. "There will be less pollution, less noise, less stress; it will be a more walkable city."

Vesco, the politician responsible for *sustainable transport* in Lyon, played a leading role in introducing the city's Vélo'v *bike-sharing* scheme a decade ago. It has since been replicated in cities all over the world. Now, though, he is convinced that digital technology has changed the rules of the game, and will make possible the move away from cars that was unimaginable when Vélo'v launched in May 2005. "Digital information is the fuel of mobility," he says. "Some transport sociologists say that information about mobility is 50% of mobility. The car will become an accessory to the smartphone."

The number of cars entering the city has fallen by 20% over the past decade, without even a congestion-charging scheme (Vesco says it would impose a disproportionate burden on the less well-off, who tend to drive higher-polluting vehicles). And even though Lyon's population is expected to rise by more than 10% over the next decade, he is targeting a further 20% drop in car use. The car parks that used to run alongside the banks of Lyon's two rivers have already been removed, and human parks opened in their place. Vesco says someone returning to Lyon for the first time in a decade would barely recognise the city.

"Multi-modal" and "interconnectivity" are now the words on every urban planner's lips. In Munich, urban planners believe that the *city dwellers* of the future would no longer need cars. Bikes and more efficient public transport would be the norm; for occasional trips out of the city, they could hire a car or join a car club that facilitated inter-city travel. The statistic everyone trots out is that your car sits

outside, idle and depreciating, for 96% of its life. There has to be a more efficient way to provide for the average of seven hours a week when you want it.

Car clubs offer a second statistic. Whereas a personally owned car caters for an individual or a family, a car-club car can service 60 people. As I type this I look at the VW Golf sitting outside my window, which I last drove a fortnight ago. *Private cars* are wasteful and expensive.

Rikhard Manninen is another man with a plan – a very large plan, which is laid out on a table in his office in the centre of Helsinki. Manninen is director of the city’s strategic urban planning division. The project is a vision of how the city will look in 2050. It will have a lot more people – the population is projected to rise by 50% – but with much less dependence on cars. The city’s population density will be increased; many of the new high-rise apartment blocks will not have residents’ car parking; key arteries into the city will be replaced by *boulevards*; more and more space will be given over to cycle lanes. A report on the plan in the Helsinki Times last year confidently predicted: “The future resident of Helsinki will not own a car.”

“*Agglomeration*” is the buzzword that planners such as Manninen like to use, and the benefits which derive from it are driving the vision of a new city. “When you are located quite close, businesses can interact more easily; people can walk to work and use public transport. It’s more efficient.”

In many cities, the era of the suburban commuter, along with the era of the car, is drawing to a close. Manninen no longer wants a city with a single centre; he envisages a multi-polar city with half-a-dozen hubs where people live, work, shop and play. This will reduce transport congestion and generate a series of vibrant, efficiently organised, semi-autonomous units – that’s the plan, anyway.

“If the 20th-century approach to solving a mobility problem, just like solving a housing problem, was to build some roads or add some rail, in the 21st century we have to adopt a non-building approach, optimising the existing built-fabric we have,” Hill says. “That’s where the possibility of, say, a shared, autonomous, self-driving car service could radically transform the way people move around a city without building a single road – just as we are already seeing companies like Airbnb transforming the approach to accommodation without building a single hotel. They don’t own any buildings at all, they write code, but they’ve changed the way the fabric of the city is working. Uber doesn’t own any cars, but they’re changing the nature of mobility.”

(Text taken and adapted from <https://www.theguardian.com/cities/2015/apr/28/end-of-the-car-age-how-cities-outgrew-the-automobile>. 01.09.2017)

TEXT AND VOCABULARY EXERCISES

1) Translate these key terms from the text into Croatian.

- sustainable transport
- bike-sharing
- city dwellers

- private car
- boulevard
- agglomeration

2) Explain these terms from the text.

bike-sharing system

congestion-charging

urban planner

car club or car sharing

residents' car parking

suburban commuter

3) Practical work (in pairs / groups)

Choose one of the topics and report about the advantages and disadvantages of these urban mobility modes.

- 1) *UBER system*
- 2) *PRT (Personal Rapid Transit) system*
- 3) *Bike-sharing system*
- 4) *Driverless cars*

TOPIC:	
ADVANTAGES	DISADVANTAGES

3. How to write a CV?

1) Match a CV form with its best description.

1	Chronological	a)	Work experience starting with most recent and skills
2	Functional	b)	Video clip, presentation, commercial
3	Combined	c)	Skills
4	Creative CV	d)	Social networking service
5	LinkedIn Profile	e)	Work experience starting with most recent

2) Europass Curriculum Vitae

- Frequently requested, standardised
- Short and simple
- CV, language passport and other options

For creating Europass CV in English online, visit:

<https://europass.cedefop.europa.eu/editors/en/cv/compose>

How would you arrange these elements in your CV? Why?

Europass CV elements:

- additional information
- personal information
- personal skills
- education and training
- work experience

WORK EXPERIENCE

- relevant jobs
- if your experience is limited, education at the top
- include internships, volunteering
- most recent at the top
- separate entries for each job
- short descriptions

EDUCATION AND TRAINING

- Start with the most recent
- PhD –thesis title, university, location
- BS – field, university, location
- No elementary or high school unless important for the job
- Include any rewards, special accomplishments, grade average

PERSONAL SKILLS

- Mother tongue
- Other languages according to the Common European Framework of Reference for Languages

Levels: A1/2: _____?

B1/2: _____?

C1/2: _____?

ADDITIONAL INFORMATION

- Publications
- Honours and awards
- Projects
- Memberships
- Seminars
- References

■ ANNEXES

I am enclosing the recommendation letter written by (name, institution, contact)

- Copies of degrees and qualifications
- Testimonial of employment or work placement

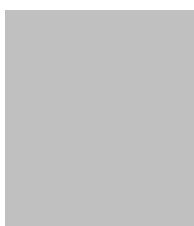
Practical work

- 1) Scan the section of the curriculum vitae on the next page.
- 2) Correct at least two mistakes.
- 3) Give advice on how to improve the entire CV.

1 Personal information

PERSONAL INFORMATION

Ina Marić



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[Sex](#) Female | [Date of birth](#) 01/08/1998 | [Nationality](#) Croatian

[2003. – 2011.](#)

primary education

primary school “ Antun Mihanović ”

[2010.](#)

▪ Languages (croatian, english, german), mathematics, physics, chemistry, geography, history
Language training

[2011. – 2015.](#)

▪ english
Secondary education

high school “ Gymnasium fra Marijan Lanosović ”

▪ Languages (croatian, english, german, latin, greek), mathematics, physics, chemistry, geography, history

2 Education and training

3 Work experience

03/2014

Volunteer

Granfondo, Zagreb (Croatia)

Regulacija prometa na križanjima.

01/2014–Present

Part-time job

Kaufland, Zagreb (Croatia)

Working in a warehouse, sorting goods, stacking and packaging.

4 Personal and other skills

Komunikacijske vještine

- easy accessible
- good at team work
- good at communicating with the co-workers

Organizacijske / rukovoditeljske vještine

- good at organization of logistics processes in a warehouse

4. Drunk driving

PRE-READING EXERCISE

Before reading the text, discuss in pairs / groups the legislation relating to drunk driving in Croatia.

New Volvo will detect if its driver has drunk alcohol and slow down if they show signs of being over the limit

- *Volvo cars will use cameras and sensors to spot if the motorist is drink driving*
- *The Swedish car maker hopes to get the technology into its cars by next year*
- *It will be fitted on all larger models such as the XC90 SUV before smaller cars*
- *Volvo is trying to build cars in which no one is killed or severely injured by 2020*

Volvo is to install technology in its self-driving cars that can detect if the driver is drunk.

The Swedish carmaker said that from next year all new vehicles will have cameras and sensors to spot if the motorist is showing signs of being over the limit.

Cars will slow down before ringing the Volvo call centre where a member of the customer service will speak to the driver and take over the car if necessary.

The self-driving vehicle may even park the car by itself if the driver is unresponsive.

The new safety features are part of the manufacturers pledge to eliminate all passenger deaths.

The advanced technology will be fitted on all larger models such as the XC90 SUV before being added to smaller cars in the range.

Sensors in the car will monitor changes in the physical movements of both the driver and the car to determine if an intervention is required.

Cameras focused on the driver's eyes will look for changes such as pupil dilatation while sensors on the steering wheel can tell how reactive the individual is behind the wheel.

This also means intervening if the drivers appear too tired or distracted by checking a mobile phone – one of the biggest factors causing road accidents.

Other sensors fitted to the car itself will sense whether the car is moving erratically.

The system designed to prevent dangerous driving is made up two-stage alarm system.

If a safety concern is detected, the car will first broadcast a warning to the driver to take caution, and if nothing changes then the car will slow down while alerting the Volvo call centre in an 'emergency state' response.

More severe measures built into the self-driving vehicle include an emergency stop and the car pulling over.

The carmaker has a reputation for safe driving and was the first to introduce the three-point seatbelt – ones that go across the chest and the waist – in 1959.

Volvo also plans to introduce Care Key, which allows the buyer to set a speed limit for themselves or before lending the car to younger or inexperienced drivers.

It will be standard on all cars from 2021. The firm's chief executive Hakan Samuelsson said it was talking to insurers to offer favourable terms to customers who were using the new safety features.

Mr Samuelsson admitted that while it may put off customers keen on driving at a high speed, it may win over parents who prefer a car with strong safety features.

It comes after Volvo said last month that it would introduce a 112mph speed limit on all new vehicles.

Volvo is building a driverless car as it aims to achieve a third of its sales from self-driving cars by 2025.

HOW WILL THE NEW VOLVO DEAL WITH DRUNK DRIVERS?

Sensing a danger

Sensors in the car will monitor changes in the physical movements of both the driver and the car to determine if an intervention is required.

Cameras focused on the driver's facial features will sense changes to pupil dilatation and whether the eyes are open.

Sensors on the steering wheel can tell how reactive the individual's hands are behind the wheel.

Other sensors fitted to the car itself will sense whether the car is moving erratically.

Intervening

The intervention system is made up two-stage alarm system. If a safety concern is detected, the car will first broadcast a warning to the driver to take caution, and if nothing changes then the car will slow down and enter an 'emergency state' where it alerts the Volvo call centre.

More severe measures built into the self-driving vehicle include an emergency stop and the car pulling over.

The technology will be used more widely than for drink driving.

The car will similarly intervene if the drivers appears too tired or distracted by checking a mobile phone – one of the biggest factors causing road accidents.

(Text taken and adapted from <https://www.dailymail.co.uk/news/article-6837371/New-Volvo-detect-driver-drunk-alcohol-slow-have.html> 23.9.2019)

TEXT AND VOCABULARY EXERCISES

1) Translate these key terms from the text into Croatian.

- self-driving car
- safety features
- emergency state response
- steering wheel
- sensors fitted to the car
- car pulling over

2) Explain the following terms in English.

being over the limit

moving erratically

severe measures

three-point seatbelt

Care Key

3) Use the words from the previous exercise to make your own sentences.

being over the limit

moving erratically

severe measures

three-point seatbelt

Care Key

4) Answer the questions about the text.

- a) What kind of technology is Volvo planning to install in its new vehicles?

- b) Which Volvo vehicles will be included in this?
- c) What type of the advanced technology will be fitted on all larger Volvo models?
- d) What steps will be taken if a safety concern is detected?
- e) Who are the target customers for this type of Volvo vehicles?
- f) Describe how the new Volvo will deal with drunk drivers in terms of sensing a danger and intervening.

5. New railway technologies

PRE-READING EXERCISE

According to the title, can you guess 5 areas in which technology helps improving railways right now? Report to the class.

Five railway technologies changing the world right now

Eurasia Rail is here to show you five railway technologies that are helping change the way we operate, manufacture and travel on trains. Let's take a look.

Hydrogen trains

While diesel engines are going the way of the dinosaur, and electric the global standard, some manufacturers and rail operators are exploring more exotic fuel options.

Fuel cells in cars are one option in the automation world, and could soon see wide-scale adoption in rail. Alstom is looking to change the game with its Coradia iLint hydrogen-powered multiple-units. In September 2018, two units began operating the world's first hydrogen-fuelled revenue service in Germany. Each unit contains a roof-mounted hydrogen tank, providing a range of 1,000km – enough for a full day's operation. Currently, mobile fuelling is being deployed to keep the trains running, but a permanent facility is being constructed at Bremervörde, and will be fully completed by 2021. That's a strong endorsement for the future of hydrogen rail.

So why hydrogen? The same logic that has been applied to cars and automobiles applies here: fewer emissions, greater fuel efficiency. Hydrogen is the most abundant element in the universe, and its by-product isn't greenhouse gas – it's just pure water. From that water, further hydrogen can be extracted to create more fuel.

Away from Germany, further countries are looking into hydrogen. The UK will be trialling a hydrogen-fuelled unit in 2019, while there is significant interest from freight operators in North America.

Facial recognition software at train stations

The days of paper train tickets are coming to an end. Contactless payment at turnstiles is in operation across the world, but a new revolution is coming: facial recognition.

China is pioneering this technology. At Wuhan train station in the Central HuBei Province, passengers can pay with "face swapping". They simply walk up, and if their face is scanned correctly, barriers are opened for boarding. Over 30 machines have been installed at Wuhan since 2017, leaving just 10 manned ticketing stations. There is one major caveat to the Chinese experience. The software draws data from the state ID database. Not all countries have such a system, so the technology will have to be adapted to local market requirements and practices to truly take off globally.

Facial recognition has other applications too. Take security. If we head back to Germany, at Suedkreuz station, Berlin, automatic face capturing CCTV systems have been installed. After a 6-month trial run, featuring 200 volunteers, authorities noted a high-success rate, which will now let them track problem people and help security forces do their jobs. Russian have also installed similar systems in terminals in Moscow.

Artificial Intelligence

Machines are getting smarter, and with their improved intelligence comes improved maintenance and efficiency for rail operators.

Condition based maintenance (CBM) and predictive maintenance (PM) are two big advantages when using smart, adaptive digital systems. For instance, diagnostic software can predict when wheels, axles, and components will need replacing. The same concept applies to non-rolling stock infrastructure, like signalling, or practical problems like route planning and scheduling.

Remote monitoring of signalling systems is coming to India. Based on systems currently in use in the UK, Indian Railways plans to install sensors along key routes to maintain signal health and machinery status, and alert authorities before problems occur. In 2016, India suffered 106 accidents, 60% of which were derailments, from signalling errors so it hopes to avoid such problems in the future. Elsewhere, in Hong Kong, the MTR Corporation of uses an automated AI system to schedule quarterly and weekly engineering works. MTR reports 50% cost and time saving using such a system. With digital help, railways around the world are seeing their operational efficiency bloom.

Automated trains

From urban metro to full on freight trains, self-driving units are enjoying a global rise in popularity. There are varying degrees of automation currently employed, although this mostly applies to metro trains. The grading systems are:

- *Grade 4 – Fully automated, capable of running without a physical staff member, featuring smart obstacle detection, emergency systems, and door closing. No human is needed for train operation.*
- *Grade 3 – Trains run automatically between stations, a staff member is on each train in case of emergencies. Grade 3 trains cannot operate without a human presence.*
- *Grade 2 – A driver is in the cab, responsible for key operations, like door opening, obstacle detection and emergency system handling.*

Over 20 countries across the globe run grade 4 urban rail and metro operations. Singapore has the world's oldest, which entered operation in 2003.

Rail passenger-focussed apps

Comfort and convenience in the railway world is getting a big boost by a wide range of passenger-centric mobile apps. Allowing users to check times, purchase tickets, and even provide in-transit entertainment, everything is being made easier from the comfort of your smartphone.

In the UK, Transreport allows users to report issues affecting their journey to the relevant authorities, including issues like broken toilets, poor carriage environment, graffiti or litter. It also has a passenger assistance function for disabled people to request any help they might need.

But how about dining? Travelkhana, an Indian app covering 300 cities and 6,000 train services, is creating a mid-journey dining revolution. Passengers simply enter their train number and select a dish from hundreds of Travelkhana's restaurant partners. The app tracks trains, after the user places their order and confirms their carriage before food is delivered directly to the passenger's seat.

(Text taken and adapted from <https://www.eurasiarail.eu/Articles/news-article-2> 24.9.2019)

TEXT AND VOCABULARY EXERCISES

1) *Translate these key terms from the text into Croatian.*

- railway technologies
- mobile fueling
- non-rolling stock infrastructure
- freight trains
- urban rail
- carriage

2) *Explain the following terms from the text in English.*

wide-scale adoption

endorsement

turnstiles

face swapping

predictive maintenance

in-transit

3) In pairs / groups, choose one of the topics from the text and research it more online. Write a short report about it.

6. Traffic jams

PRE-READING EXERCISE

Before reading the text, answer the following questions. Discuss your answers in pairs.

1. When was the last time you experienced a traffic jam / congestion?
2. What do you think are main reasons for such problems in traffic?
3. Provide one possible solution for traffic jams and explain it in more details.

Can a city ever be traffic-jam free?

Traffic jams are the bane of motorists' lives, whether it's the daily bottleneck during the commute to work, or endless delays on motorways at the start of the holidays. If you think your journey is bad, spare a thought for drivers in Sao Paolo, Brazil – one evening in May this year, the traffic jams during rush hour added up to a 344km (214-mile) cumulative queue, according to the city's traffic management agency.

Jams are not only frustrating, they are also a major contributor to air pollution, and that's bad not just for our climate, but everybody's health too. According to researchers at the Harvard Center for Risk Analysis, congestion in the 83 largest urban areas in the United States caused more than 2,200 premature deaths in 2010 and added \$18bn to public health costs.

Then there is the economic cost of lost hours (both work and leisure) and delayed shipments. Drivers in the 10 most-congested cities in the United States sit around 42 hours in traffic jams every year, wasting more than \$121bn in time and fuel while doing so.

This isn't a new problem, of course. During the car boom of the 1960s, city planners had one seemingly obvious solution: build more and wider roads. But it didn't work. The more roads created, the more cars they attracted. In California, for example, a 1997 study found that new, additional traffic will fill up to 90% of any increase in highway capacity within just five years.

While every city – whether London, Beijing or New York – has its unique set of traffic problems, there are a few common issues: many people insist on driving their own car, instead of sharing rides or using a bicycle; up to a third of cars on roads are drivers looking for a place to park; and then there's the human factor: most of us simply are not very efficient drivers.

So what's the solution? Some traffic planners are betting on car-pooling lanes, more park-and-ride opportunities, and improved public transport to ease congestion. Several cities have resorted to less subtle methods, like banning cars from driving on certain days, alternating between cars with licence plates that end in, say, even or uneven numbers.

As much of this traffic is drivers looking for a place to park, some cities are trying to manage flow with systems that use sensors to determine whether a particular spot on the street, or in a car park, is

occupied or vacant. Link these smart sensors with a system that guides drivers quickly and efficiently to vacant parking spots and the hope is this will ease congestion. The first trial of these sensors started in San Francisco, with Los Angeles not far behind, both cities currently being serviced by ACS, a Xerox subsidiary.

Two years ago in Russia, Moscow trialled smart parking providers and is now using a system developed by Worldsensing, says Mischa Dohler, professor at King's College London and co-founder of the company. He says that with nearly 20,000 smart parking spaces, Moscow is by far the largest smart parking smart city deployment in the world. The number of traffic jams has gone down, Dohler says, "mainly because people are being informed about the non-availability of parking, and they thus keep out of the narrow one-way streets in the centre."

However, ending this curse of congested city streets may need more of a radical rethink. What if the solutions begin not with the roads – but with the cars themselves?

Using wireless vehicle-to-vehicle communication, cars could talk to each other in an attempt to keep traffic flowing more smoothly. "In many cases, congestion is triggered by human behaviour," says Orosz. "Humans react to the motions of the vehicles immediately in front with a reaction time delay. The impact of this is that they often amplify the ripples created by other drivers tapping the brake. As the congestion wave cascades along the chain of vehicles, eventually it grinds traffic to a halt."

But if cars could communicate with each other in real time, these ripples could be smoothed out. "Your car may monitor the motion of a vehicle five vehicles ahead and prepare for what is going to happen – by braking earlier but less intensively," says Orosz. "The information received may be presented to the driver, such as advised speed, or used by controllers in the automobile to assist the driver."

Perhaps it's also time to return to our pre-car roots. Before the age of cars and trains, rivers and lakes were important inland waterways in countries such as Britain and Sweden.

Karl Garne, a researcher at the Royal Institute of Technology in Stockholm, is now conducting a study called Waterway 365. Funded by the Swedish Maritime Administration, the current initial phase aims to research the issues crucial to making use of waterways "as an infrastructural resource for public transport and city logistic systems over the 365 days a year", says Garne. Vancouver, Sydney and Istanbul are already cities making good use of their waterways. "The question is not land or water, but integrating the waterways in the present system and incorporating it when planning new," he says. "It means that the traveller shall easily change from commuter train to underground or boat or bus or... preferably not even thinking about means of travel, simply take the suggested route from a travel planner."

The solution to beating traffic congestion in cities, if it comes, will probably take a long time to reap rewards. But if at least some of these new ideas are a success – whether it's driverless cars, smart parking spaces or commuter apps – the days of Sao Paulo's epic tailbacks may finally be consigned to history.

(Text taken and adapted from: <http://www.bbc.com/future/story/20140611-can-we-ever-end-traffic-jams> 25.9.2019)

TEXT AND VOCABULARY EXERCISES

1) Translate these key terms from the text into Croatian.

- traffic congestion
- traffic jam
- delay
- queue
- vehicle-to-vehicle communication
- inland waterways

2) Explain the following terms from the text in English.

bottleneck

car-pooling lane

park-and-ride

road space rationing

smart parking

commuter boat service

3) Provide synonyms for these words from the text.

- bottleneck
- car-pooling lane
- motorway
- boom
- driverless car

4) Pairwork / groupwork: analyze the following topics mentioned in the text as the solutions to combat traffic jams and congestion and decide what could and could not work in your city. Write a short report and present it to the class.

1. CAR POOLING LANES
2. MORE PARK AND RIDE OPPORTUNITIES AND BETTER PUBLIC TRANSPORTATION
3. SMART PARKING SYSTEMS
4. VEHICLE-TO-VEHICLE COMMUNICATION

7. Airports

PRE-READING EXERCISE

What are some problem areas for the travelers at the airports? Provide suggestions for improvement. Discuss in small groups.

Airports of the future: five areas set for radical change

Airports are changing fast, as the rise of new technologies and growing environmental constraints play a crucial role in shaping the future of aviation. With growing pressures coming from passengers and stakeholders, here is a look at five areas ripe for change.

Baggage reclaim areas repurposed to increase capacity

A lot has already been done to eliminate *baggage drop desks* in airports around the world, with leading airlines including British Airways and EasyJet already using automated self-service systems at Heathrow and Gatwick Airport respectively.

But on the other end of the spectrum – in those areas where luggage is collected – the situation is still chaotic and hundreds of bags get lost or stolen every day. This ordinarily leads to confusion and stress among both passengers and airport staff, as well as financial damages. Fortunately, the situation is likely to change in the coming decades, and recent studies at Cranfield University indicate it might be sooner than later. Under a cross-departmental project called Urban Turbine, lecturer Henrik Rothe is in fact researching how the Amazon model could be applied to aviation to create a system of luggage delivery from an airport to passengers' homes. Following this principle, bags would be treated as individual passengers and loaded on public transport to be moved between a city centre and its airport. If viable, the system could completely eliminate the need to have luggage terminals, which could in turn be used to meet many *hubs'* increasing capacity demands.

Shorter security checks

The concept is not entirely new, but it may still be a while before liquid removal stops being compulsory at airport security checks. A practice that was introduced globally in the aftermath of the 9/11 terrorist attacks, it's among the most *recurring* causes of disruption and delays at border controls. However, airports like Heathrow have now started trialling technologies that can scan liquids and other materials from inside bags. Within this framework, US-based Rapiscan Systems is progressing fast and recently rolled out its 920CT checkpoint screening system. Having received approval from the European Civil Aviation Conference, the scanner could be a *game changer* in the industry. Using advanced software and detection algorithms and 3D volumetric imaging, it would mean that passengers would no longer have to take liquids or electronic devices out of their bags.

Improving public transport links

Boosting sustainability records is at the top of the agenda for most airports, with many working alongside partners and stakeholders to reduce their *carbon footprint*, from *departure halls* to the

airport *apron*. A potentially easy way to achieve this is by leveraging passengers' environmental consciousness and promoting public transport over cars. This idea is *gaining traction* in the UK particularly, where several airports – from Manchester to Bristol to London Luton – are already working to improve *surface access* and train links. This much-needed collaborative effort from both the railways and aviation could lead to higher volumes of rail travellers, cheaper trips and, in the long term, fewer cars reaching the airport every day. If this concept proves effective, it would mean that airports can resize and re-use car parks to meet growing capacity demands while enhancing their sustainability *credentials*.

Paving the way for driverless and autonomous vehicles

Even if passengers remain *reliant on* road transport – which is faster and more comfortable for many – chances are high that the car parks of the future will be radically different. First of all, they are likely going to have many more charging stations, as electric vehicles will become more popular. Secondly, driverless and autonomous *shuttles* will gradually take over the roads around the airport to make connections between car parks and train stations quicker and more *seamless*. Their deployment will allow higher capacity, fast travels and a potentially more sustainable solution for both customer-facing and internal operations. Prototypes of these vehicles have already appeared in Japan, which is planning to face *rocketing passenger streams* during the 2020 Olympic Games. As for internal operations, Rotterdam's the Hague Airport is currently pioneering an autonomous baggage handling system that carries single bags through an airport, making the likelihood of seeing these vehicles in operation higher over the course of time.

Customer service: the rise of robots

In the coming decades, robots are likely to take over several customer-facing jobs currently held by airport staff, especially as passenger rates continue to rise and airports grow overcrowded. Technology is already replacing admin jobs at *check-in desks*, with most airlines encouraging customers to use their apps for check-in and some of them implementing *self-service bag drops*. But as years go by, we will likely say goodbye to staff working at bars and restaurants and many other areas of the departure hall, leaving space for robots. In Japan, this phenomenon is partially already taking place. Tech giant Panasonic recently *rolled out* a fleet of robots embedded with artificial intelligence and facial recognition capabilities that help passengers find their way through an airport by scanning their face and providing customised information. Meanwhile, in 2018, US company Café X Technologies launched a robot arm capable of making 120 cups of coffee an hour and filling between 300 and 400 jobs orders a day. It may be a long time until solutions such as the Café X robot become more common at airports, but it seems they could offer a new level of *convenience* for passengers during peak hours.

(Text taken and adapted from: <https://www.airport-technology.com/features/what-will-airports-of-the-future-look-like/>12.02.2020)

TEXT AND VOCABULARY EXERCISES

1) *Translate these key terms from the text into Croatian.*

- baggage drop desks
- hub airport
- security check
- departure hall
- apron
- shuttle

2) *Work in 5 groups. Each group will read a part of the text and answer related questions. After that, report to the rest of the class.*

Group 1

Read the section ***Baggage reclaim areas repurposed to increase capacity*** and answer the following questions:

1. What has replaced the baggage drop desks in some airports?
2. What can be done to improve the efficiency in collecting the luggage?

Group 2

Read the section ***Shorter security checks*** and answer the following questions:

1. What is described as one of the most recurring causes of disruption and delays at border controls?
2. What technologies have been mentioned as alternatives to liquid removal from the bags?

Group 3

Read the section ***Improving public transport links*** and answer the following questions:

1. Why is it important to improve surface access to airports?
2. What would be the benefits of such an improvement?

Group 4

Read the section ***Paving the way for driverless and autonomous vehicles*** and answer the following questions:

1. What types of vehicles are likely to be seen on the roads in the future?
2. Name the example of automation in airports' internal operations.

Group 5

Read the section ***Customer service: the rise of robots*** and answer the following questions:

1. What are some of the examples of customer-facing jobs robots are likely to take over in the coming decades?
2. What is Café X robot?

3) Explain the following terms from the text in English and write your own sentences using these terms.

carbon footprint

surface access

rocketing passenger streams

check-in desks

self-service bag drops

8. Cargo

1) Watch the video clip about cargo, and then read the text.

<https://www.youtube.com/watch?v=qjGO2Tofl2s>

Cargo refers to goods or produce carried in a truck, van, airplane, train, or ship. We can transport cargo by land, sea, or air. The word *freight* has the same meaning. In this context, 'produce' means things that have been made or grown, especially things connected with agriculture. For example, if the cargo is dairy produce, it could be cheese, yogurt, milk, cream, or butter.

We can also refer to livestock during transport, such as cattle, pigs, or chicken as cargo. When we transport humans, however, we refer to them as passengers or crew.

The term '*shipping*' refers to the transportation of cargo. Cargo originally only referred to a load on a ship. However, today we use it for any type of freight, including loads carried by airplane, motor vehicles, train, and ships or boats.

Seaport terminals handle a wide range of maritime cargo:

Break bulk cargo is typically material stacked on pallets and lifted into and out of the hold of a vessel by cranes on the dock or aboard the ship itself. The volume of break bulk cargo has declined dramatically worldwide as containerization has grown. One way to secure break bulk and freight in intermodal containers is by using Dunnage Bags.

Bulk cargo, such as salt, oil, tallow, and scrap metal, is usually defined as commodities that are neither on pallets nor in containers. Bulk cargoes are not handled as individual pieces, the way heavy-lift and project cargoes are. Alumina, grain, gypsum, logs, and wood chips, for instance, are bulk cargoes. Bulk cargo is classified as liquid or dry.

Container Cargo: Containers are the largest and fastest growing cargo category at most ports worldwide. Containerized cargo includes everything from auto parts, machinery and manufacturing components to shoes and toys to frozen meat and seafood.

Neo-bulk cargo comprises individual units that are counted as they are loaded and unloaded, in contrast to bulk cargo that is not counted, but that are not containerized.

Project cargo and the heavy lift cargo include items like manufacturing equipment, air conditioners, factory components, generators, wind turbines, military equipment, and almost any other oversized or overweight cargo which is too big or too heavy to fit into a container.

Roll-on/roll-off Cargo: Automobiles are handled at many ports and are usually carried on specialized roll-on/roll-off ships.

In most cases, transporters or shipping companies carry cargo for commercial gain. However, when emergency supplies are being carried to, for example, a disaster zone and the carrier is not making a profit, we might still refer to it as cargo.

The word cargo first appeared in the English language in the 1650 with the meaning "freight loaded on a ship."

Most shippers, especially if their cargo is large, should take out cargo insurance to protect goods from damage, theft, or loss while in transit. There is typically insurance coverage for the goods while

they are in transit or being stored, until the buyer has them. When insuring freight, it is important to read the small print, because most policies have limitations. In the US, for example, insurance for freight being shipped by truck does not provide protection against every type of loss.

Containers sometimes fall overboard or are released by sea vessels during severe storms. In 2017, 130 million freight containers were transported by sea. According to the World Shipping Council, those containers held more than \$12 trillions' worth of cargo. Out of that total, 10,000 containers fell into the sea due to high seas, severe weather conditions, incorrect stowage, and various types of accidents. Ten thousand, out of 130 million, do not sound like that many. However, if they were your cargo it could be catastrophic. That is why insuring your merchandise is important.

Governments across the world strive to try to make sure that cargo shipments coming in from abroad do not pose a security risk for the country. Many have introduced laws, which customs agencies administer, regarding the handling of cargo to minimize the risks of, for example, terrorism. Governments are also concerned about narcotics and weapons entering the country illegally. Ever since the terrorist attacks of September 11th, 2001, the United States has been monitoring the cargo that enters the country much more closely. More than six million cargo containers come in through US ports each year.

Air cargo, commonly known as air freight, is collected by firms from shippers and delivered to customers. Aircraft were first used for carrying mail as cargo in 1911. Eventually manufacturers started designing aircraft for other types of freight as well. Airplanes also use containers.

Trains are capable of transporting large amounts of freight and generally have a direct route to the destination so they are more economic and energy efficient than road transport. Their main disadvantage is the lack of flexibility.

For this reason, rail has lost much of the freight business to road transport. It is often subject to transshipment costs, but practices such as containerization aim at minimizing these costs. Many firms transport all types of cargo by road offering fast, sometimes same-day delivery. A good example of road cargo is food.

(Text taken and adapted from: <https://marketbusinessnews.com/financial-glossary/what-is-cargo-definition-and-examples/> 12.02.2020 and <https://en.wikipedia.org/wiki/Cargo> 12.02.2020)

TEXT AND VOCABULARY EXERCISES

1) Translate these key terms from the text into Croatian.

- **cargo**
- **shipping**
- **break bulk cargo**
- **bulk cargo**
- **container cargo**
- **neo-bulk cargo**
- **project cargo**
- **roll-on/roll-off cargo**

2) Explore and explain the following terms from the text.

break bulk cargo

bulk cargo

project cargo

cargo insurance

stowage

3) Match the cargo with its type.

bags coal paper lumber boxes sand steel vegetal oils pallets vehicles

BREAK BULK CARGO	BULK CARGO	NEO-BULK CARGO

4) Discuss the following questions.

1. What are the main advantages of containerization?
2. What are the advantages and disadvantages of cargo trains?
3. What is the advantage of road cargo transport?

9. Environmentally friendly sea transportation

PRE-READING EXERCISE

Before reading the text, make 2-3 predictions as to what you think the text will be about.

Green sea transport: creative approaches for environmentally friendly shipping

Almost everything you buy—no matter how organic or natural—has an impact on the environment. Why? Because everything made and sold has to be transported, and transportation almost always means burning fossil fuels.

Even sea transport, which is more environmentally friendly than other forms of transport, has a big impact. Ships produce huge amounts of air pollution—one large ship produces as much Sulphur as 50 million cars. And that doesn't even count other greenhouse gases or water pollution.

These problems will only grow worse as the volume of shipping increases. And increase it must — global trade is an important economic driver that helps spur development and reduce poverty. Already, it accounts for half of the world's total economic output. And over 90 percent of that trade goes by sea.

Should we even worry about this, given that other forms of transport cause more environmental harm? Absolutely. Infrastructure is especially vulnerable to climate risks. So it makes sense to look into every option that could potentially reduce those risks. With shipping volumes so high, even modest improvements can have a big impact in the long run. And it turns out there are plenty of ways to reduce the environmental impact of sea transport.

There are some ways to do this. Improving fuel efficiency is the most obvious—ships use an especially dirty fuel with high Sulphur content, so reductions in fuel use have an immediate impact. In Québec, ferry ships that run on natural gas are expected to cut greenhouse gas emissions by a quarter. Last year, two Finnish firms, Norsepower Oy and Bore, conducted a successful sea trial using a wind propulsion system to reduce the need for fossil fuels, demonstrating potential efficiency savings of five percent.

Another simple but effective approach is to provide power to docked ships by plugging them in to the electric grid. This alone can reduce carbon emissions by over 30 percent.

Another creative approach to help safeguard the environment is to make information available about the environmental performance of sea transport providers. The Swedish-based Clean Shipping Index provides a tool to enable cargo owners to consider the environmental impact of their operations in their tendering processes. It also provides valuable data that can be used as a benchmark for environmentally-friendly shipping.

But if there were an award for creative solutions for reducing the environmental impact of the sea transport sector, it would probably go to Dubai Ports World. To prevent a planned port in the Dominican Republic from causing severe damage to coral, they simply moved it using underwater balloons. The transplanted coral colonies are now thriving and attract 1,500 divers a year.

There's no doubt we need a healthy and growing shipping industry to keep goods on the shelves and drive global economic development. But we also need to make sure our infrastructure—including sea transportation system—is sustainable and resilient to climate risks. It's a good thing, then, that there are creative options for keeping the sea green.

(Text taken and adapted from <https://blogs.worldbank.org/ppps/green-sea-transport-creative-approaches-environmentally-friendly-shipping> 24.9.2019)

TEXT AND VOCABULARY EXERCISES

1) Translate these key terms from the text into Croatian.

- **wind propulsion system**
- **docked ships**
- **safeguard the environment**
- **environmental performance**
- **tendering processes**
- **a benchmark for environmentally friendly shipping**
- **resilient to climate risks**

2) Explain the following terms from the text in English.

environmentally friendly shipping

economic driver

fuel efficiency

conducted a successful sea trial

wind propulsion system

Clean Shipping Index

3) Provide synonyms and antonyms for the following terms from the text.

WORD	SYNONYM	ANTONYM
fossil fuels		
grow worse		
spur		
improvement		
safeguard		
resilient		

4) Watch the video <https://www.euronews.com/living/2018/12/18/worldwide-shipping-should-go-green-and-it-already-started-in-norway> and report about Norway's sustainable shipping solutions. You can work individually, in pairs or in groups.

10. Tunnels

PRE-READING EXERCISE

Before reading the text, think of at least one technological innovation in construction of tunnels.

Fast Technology Innovations in construction of Roads, Tunnels and Bridges

Advancements in roads, buildings, and tunnels can be ascertained from the fact that there are technological innovations involved that have started to make a tremendous impact on the way the entire process of construction is approached. There are a few innovations that have spread across geographies and have made the construction of these enormous projects look unusual yet effective.

Self-healing concrete

It all boils down to concrete when it comes to building bridges, tunnels, and roads. This is the most used material after all. But ever imagined if concrete can fix itself if a crack occurs? Well, scientists have been working on it and innovations have been made in this regard. This technology makes more sense and difference in the case of big projects where human intervention once the work done stands minimal. It is only sensors through which one can keep track of what developments and alterations are taking place within the structure. Scientists have been using limestone-producing fungus called *Trichoderma reesei* which is a concrete admixture that fixes cracks as and when they occur.

Virtual reality in construction

VR is being used pretty extensively these days in humungous projects. Much before the project's kick-off, virtual reality gives an understanding of how elements are going to shape-up as things move. The most highlighted part of this aspect is its contribution to the readiness of authorities during the process of construction of such projects. Through virtual reality, contractors can gauge the obstructions much before they occur.

Site Robots

There are points in these structures where the workforce cannot intervene. This is where technology in equipment comes into the picture. Through IoT and AI, contractors can keep the machines moving without having the manpower to physically operate them. Excavators, cranes and other huge equipment work with the use of AI which gets the machines to connect directly with the supervisors or handlers who are sitting at a far distance. What this technology has done is reduce the time taken quite considerably. Another aspect of applying advanced technology in the construction of these mammoth tunnels or bridges is the use of drones. The plans of these tunnels and bridges involve a very complex landscape. Through the use of imageries coming via these drones, the supervisors get to easily identify issues and work on them in advance to eradicate them. This saves time, money and helps achieve the most important element, precision.

RFID Tags

Time frame plays a very important role in the construction of such projects. It becomes mandatory for supervisors to keep a proper check on the exhaustion of materials which are usually required in bulk. Stalling of projects due to material unavailability is the last thing one would want because the costing and time both get affected because of it. These RFID tags ensure that doesn't happen. They trigger an alert as soon as materials are reaching a stage where they are nearing exhaustion. The supervisors then take appropriate steps to order materials in advance so that the continuity is maintained.

(Text taken and adapted from <https://www.transportadvancement.com/road-traffic/fast-technology-innovations-in-construction-of-roads-tunnels-and-bridges/> 06.03.2020)

TEXT AND VOCABULARY EXERCISES

1) Translate these key terms from the text into Croatian.

1. **self-healing concrete**
2. **a concrete admixture**
3. **site robots**
4. **IoT**
5. **RFID tags**
6. **exhaustion of materials**

2) Make your own sentences using the key terms from the previous exercise.

3) Working in groups, choose one of the above ideas and write a short report about it using the following guide.

Describe the proposed idea (what are the goals, how does it work, etc.).

Describe the potential applications of the idea.

Describe the benefits that it provides.

Describe the limitations and potential problems.

Provide existing examples.

References

- Berti, A., Berti, A. and Berti, A. *What Will Airports Of The Future Look Like? Five Areas Set For Radical Change*. [online] Airport Technology. Available at: <<https://www.airport-technology.com/features/what-will-airports-of-the-future-look-like/>> [Accessed 12 February 2020].
- En.wikipedia.org. *Cargo*. [online] Available at: <<https://en.wikipedia.org/wiki/Cargo>> [Accessed 12 February 2020].
- En.wikipedia.org. *Logistics*. [online] Available at: <<https://en.wikipedia.org/wiki/Logistics>> [Accessed 1 September 2017].
- Eurasiarail.eu. *Eurasia Rail - International Rolling Stock, Infrastructure & Logistics Exhibition - Eurasia Rail*. [online] Available at: <<https://www.eurasiarail.eu/Articles/news-article-2>> [Accessed 24 September 2019].
- Euronews Living | *Norway Is Leading The Way In Sustainable Shipping*. [online] Available at: <<https://www.euronews.com/living/2018/12/18/worldwide-shipping-should-go-green-and-it-already-started-in-norway>> [Accessed 24 September 2019].
- Europass.cedefop.europa.eu. *Europass Online Editor*. [online] Available at: <<https://europass.cedefop.europa.eu/editors/en/cv/compose>> [Accessed 1 September 2017].
- Formula 1 logistics: from Austin to Mexico City. Available at: <https://youtu.be/z-Rw_lbd1iE> [Accessed 1 September 2017].
- How Amazon manages 35 orders a second. Available at: <<https://www.youtube.com/watch?v=LsEsuJhg660>> [Accessed 1 September 2017].
- London Heathrow T5. Available at: <<https://www.youtube.com/watch?v=Wn8qogHH9bM>> [Accessed 1 September 2017].
- Market Business News. *What Is Cargo? Definition And Examples - Market Business News*. [online] Available at: <<https://marketbusinessnews.com/financial-glossary/what-is-cargo-definition-and-examples/>> [Accessed 12 February 2020].
- Moskvitch, K., *Can A City Ever Be Traffic Jam-Free?*. [online] Bbc.com. Available at: <<http://www.bbc.com/future/story/20140611-can-we-ever-end-traffic-jams>> [Accessed 25 September 2019].
- Moss, S., *End Of The Car Age: How Cities Are Outgrowing The Automobile*. [online] the Guardian. Available at: <<https://www.theguardian.com/cities/2015/apr/28/end-of-the-car-age-how-cities-outgrew-the-automobile>> [Accessed 1 September 2017].
- Sharples, E., *New Volvo Will Detect If Its Driver Has Drunk Alcohol And Slow Down*. [online] Mail Online. Available at: <<https://www.dailymail.co.uk/news/article-6837371/New-Volvo-detect-driver-drunk-alcohol-slow-have.html>> [Accessed 23 September 2019].
- Transport Advancement. *Fast Technology Innovations In Construction Of Roads, Tunnels And Bridges*. [online] Available at: <<https://www.transportadvancement.com/road-traffic/fast-technology-innovations-in-construction-of-roads-tunnels-and-bridges>> [Accessed 6 March 2020].
- What is cargo. Available at: <<https://www.youtube.com/watch?v=qjGO2Tofl2s>> [Accessed 12 February 2020].
- World Bank Blogs. *Green Sea Transport: Creative Approaches For Environmentally Friendly Shipping*. [online] Available at: <<https://blogs.worldbank.org/ppps/green-sea-transport-creative-approaches-environmentally-friendly-shipping>> [Accessed 24 September 2019].