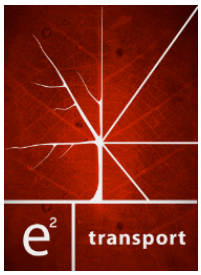


e² transport — Paris: Vélo Liberté

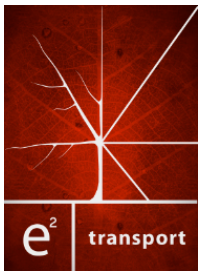
Episode Summary

Over three million cars enter and depart Paris each day, which has contributed in part to the city having some of the highest pollution levels in the European Union. To address the problem, a decision was made in 2001 to reduce automobile traffic and prioritize other forms of transportation in Paris. In the video, Denis Baupin, the Deputy Mayor of Paris, describes the way the city reallocated some public space to build a tramway that transports three times as many people as cars previously did. They also made an effort to encourage Parisians to bicycle more with major improvements to the city including 400 km of bike paths. Despite their efforts, by 2005, cyclists still only accounted for about 1% of all transportation in Paris, well below what they had hoped for.

The Mayor's office had a strong belief that biking would not only counter some of the city's traffic and pollution problems but also improve the lives of Parisians on a personal level. But in order to accomplish their goal, the city government had to change the way that Parisians thought about biking. They wanted the public to see it not as an old-fashioned form of transportation used after World War II when people were struggling, but a fashionable and enjoyable way to experience the city while also getting to their destination.

They had already decided to implement a bicycle-sharing system but found very few successful models to work from. They decided to break Paris up into 400 square meter sections and conduct a significant amount of research and analysis on population density, job density, and the number of businesses in each section. They were then able to determine the potential demand for bikes. They knew that if they introduced an inadequate system and people had trouble finding bikes or were otherwise inconvenienced, it would be very hard to repair the damage to public opinion, so they only had one chance to get it right. After careful planning and an innovative approach to funding, they introduced Vélib', the largest bicycle sharing system in the world, which boasts 20,000 bikes and 1,450 stations, one approximately every 300 meters. The name is a combination of the French words for bicycle (vélo) and free (libre) to suggest the freedom and fun of riding a bike.

In order to fund and implement such a large-scale system quickly, the city of Paris created a partnership with JCDecaux, one of the largest advertising agencies in France. The city of Paris allowed JCDecaux to install roughly 1,400 large advertising displays throughout the city, an approximate 60 million dollar value per year in outdoor media space. In exchange, JCDecaux agreed to pay for the initial construction and all the costs

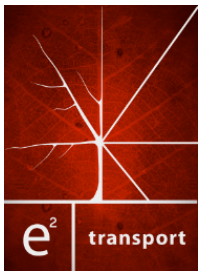


associated with running the Vélib' system for the first ten years. So essentially JCDecaux paid for the entire system in exchange for a significant amount of outdoor advertising space that they can use for their clients.

With sturdy bike construction, a software system to help manage flow, a repair barge on the river Seine and 20 clean-fuel trucks to replenish stations when needed, Vélib' has been even more successful than its creators had imagined. Not only do 50,000 to 100,000 people use Vélib' bikes on an average day, but the number of trips that people take using their own bikes has also doubled. Cycling has become a major part of Parisian culture, which has had some quantitative effects on traffic and pollution. Yet, perhaps more important are the qualitative effects on the citizens of Paris. People are socializing at the stations, enjoying the weather, seeing parts of the city that they may have missed before and getting some exercise, while also arriving at their destination.

To find out more about Vélib', visit www.en.velib.paris.fr

To find out more about JCDecaux, visit www.jcdecaux.com or
JCDecaux North America, visit www.jcdecauxna.com



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PRE-VIEWING QUESTIONS

1) How prevalent is biking in your community? Are there bike paths on most roads? What is the most common way for people to get around in your city or town?

2) What are some potential environmental effects of a lot of automobile traffic on the roads? How does traffic affect the inhabitants of a city in their daily lives?

3) From your home, how far do you have to travel to find a grocery store? A bank? A school? A place of worship? A green space? How do you think this distance differs for people in rural communities? Urban communities? Suburban communities?

4) What role do you think transportation plays in climate change, if any? Think about all forms of transportation (i.e. walking, biking, driving, etc.).

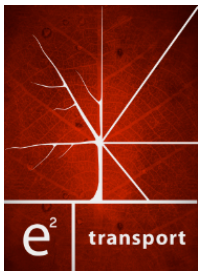
POST-VIEWING QUESTIONS

1) Do you think a system like Vélib' could work in your community? Why or why not? If not, can you think of a place in the United States that a similar system might be successful?

2) What do you think is the best way to get around in your community? If you could redesign all the transportation options in your city or town, what would you create?

3) Some of the positive effects of the Vélib' system are mentioned in the video, are there any negative effects?

4) Roads are public space as are tramways, bus lanes, bike lanes, sidewalks and parks. What do you think is the most equitable way to divide that public space among the citizens of a city or town? What type of research could be conducted to help develop a plan for public space?

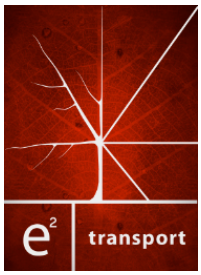


5) What are some of the challenges that the Vélib' system has faced since its inception? How are those challenges being addressed? Use specific examples from the episode.

6) Of the following examples of transportation, which is the most efficient? Rank them from 1 to 7, with 1 being the most efficient and 7 being the least efficient.
   a. A person walking
   b. 75 people riding on a bus
   c. 500 people riding a subway
   d. a person biking
   e. a single person driving in a pick-up truck
   f. four people riding in a car
   g. a single person in an electric car

   Were these easy or hard to compare? Why or why not? List some of the factors that you used to make your decisions.

7) What different types of efficiency do we measure? (i.e. cost efficiency, energy efficiency, etc.) How do you use efficiency in your own life? (i.e. saving money, managing your time for homework, etc.)



NATIONAL STANDARDS FROM MCREL STANDARD

Engineering Education

Standard 14.4: Understands how societal interests, economics, ergonomics, and environmental considerations influence a solution.

Standard 16.3: Understands the role of research and development in the production of new or improved products, processes, and materials

Standard 17.6: Understands tradeoffs among characteristics such as safety, function, cost, ease of operation, quality of post-purchase support, and environmental impact when selecting systems for specific purposes

Standard 17.11 - Understands the advantages/disadvantages of various inventory control methods (e.g., just-in-time inventory methods, keeping inventory in storage, inventory control software, automated inventory control)

Life Skills/Life Work

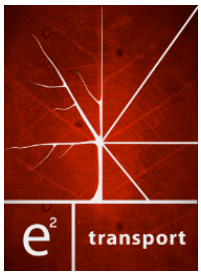
Standard 6.2 - Uses public transportation effectively (e.g., identifies transportation alternatives, determines transportation needs)

Technology

Standard 3.2 - Knows ways in which social and economic forces influence which technologies will be developed and used (e.g., cultural and personal values, consumer acceptance, patent laws, availability of risk capital, the federal budget, local and national regulations, media attention, economic competition, tax incentives)

Standard 4.5 - Knows that since there is no such thing as a perfect design, trade-offs of one criterion for another must occur to find an optimized solution.

Standard 4.6 - Knows that a design involves different design factors (e.g., ergonomics, maintenance and repair, environmental concerns) and design principles (e.g., flexibility, proportion, function).



Standard 6.6 - Knows that modern transportation systems are diverse (allowing humans to combine types of transportation for the most direct and convenient route), intelligent (requiring coordinated subsystems, such as a traffic light system), and are necessary in the functioning of most other technologies

Standard 6.8 - Knows different requirements for structural design (e.g., strength, maintenance, appearance) and that these structures require maintenance.