

Mapping E-Commerce Locally and Beyond: CITT K12
Special Investigation Project?

Project 2067
November 2021

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Who made my clothes?

The map to the right displays garment facilities worldwide. Scroll and click on blue icons to identify a facility.

The data was gathered from Open Apparel Registry (OAR), a neutral, non-profit organization. OAR created an open-source tool that maps garment facilities worldwide.

OAR assigns a unique ID number to each facility; this is to ensure that facilities are not double counted due to their inventory being voluntary by industry stakeholders. Industry stakeholders include multistakeholder initiatives (MSIs), brand and retailer



Visualizing Range Limitations

At present, the main limitations of the vehicles themselves is range and charging time. As part of a feasibility assessment of zero-emissions vehicles in 2018, the Port of Los Angeles set a threshold of needing to be able to travel a maximum of 600 miles in a shift or a maximum of 800 miles in a day for trucks. They found no HDEVs at the time met their requirements for maximum shift distance or daily mileage and based on newer published vehicle specifications this does not seem to have changed. Charging



The last twenty years have seen rapid acceleration in the integration of digital technology into the American workplace. Accordingly, K12 educators must now shoulder increasing responsibilities for equipping their students with digital skills. Geographic Information Systems (GIS) enable students and teachers to practice and apply spatial thinking in many areas of the curriculum. In short, lessons resonate more deeply when students are presented with map-based material.

Study Methods

The CITT K12 Special Investigation Project was developed in collaboration with teachers from the El Rancho Unified School District (ERUSD), California State University, Long Beach (CSULB) student leaders from MAES (Latinos In Engineering and Science), and with Career and Technical Education (CTE) and Geographic Information Science (GIS) staff from the Rio Hondo College (RHC).

The project introduces GIS and geospatial thinking through the lens of e-commerce and its environmental and economic impact. However, the StoryMap tools introduced in the project can be used in virtually all subject areas. The materials lend themselves easily to assignments in humanities, language arts, science and math. The project provides teachers with the following resources: 1) Google Slide presentations introducing GIS and StoryMaps 2) Step-by-step guides to creating an account and navigating StoryMap's tools and options 3) Ten lesson plans that guide teachers and students through the creation of a StoryMap from choosing a topic to conducting research and presenting the finished Map 4) Several short videos where college students and graduates share their use of GIS and encourage interest in related STEM occupations 5) A repository of additional curricular resources recommended by GIS subject matter experts.

Findings and Policy/Practice Recommendations

This SB1 K12 Special Investigation Project allows for the development of GIS skills for both STEM and non-STEM teachers. As the world relies more on data and spatial analysis for problem solving, teachers of all subject matters can not only use StoryMaps as new curricular resources for content and data, but they can also create their own material. Furthermore, GIS is increasingly evolving into foundational, general education courses at community colleges and universities.

K12 educators have an increasing responsibility to help their students acquire the technology skills necessary to organize and interpret information through Geographic Information Systems (GIS), especially in careers related to transportation and logistics.

Leaders in CSULB MAES Latinos In Engineering and Science provided valuable insight into what students would like to see in the classroom. They strongly recommended that sustainability and environmental justice concerns be front and center in examining the effects of e-commerce locally, regionally, nationally, and internationally.

About the Authors

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Ms. Matsumoto has over 20 years of teaching and curriculum design experience and has served on the leadership teams of two K12 Western Association of Schools and Colleges (WASC) accreditation committees. She is a state and regional recipient of the California Council of Adult Education Excellence (CCAE) in Teaching award. Ms. Matsumoto received her Bachelor's degree from Yale University and her Master's degree in Architecture and Urban Planning from the University of California, Los Angeles.

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To Learn More

For more details about the study, download the full report at transweb.sjsu.edu/research/2067



MTI is a University Transportation Center sponsored by the U.S. Department of Transportation's Office of the Assistant Secretary for Research and Technology and by Caltrans. The Institute is located within San José State University's Lucas Graduate School of Business.