

Singapore Management University

Institutional Knowledge at Singapore Management University

MITB Thought Leadership Series

School of Computing and Information Systems

12-2018

Leveraging artificial intelligence to capture the Singapore rideshare market

Pradeep VARAKANTHAM

Singapore Management University, pradeepv@smu.edu.sg

Follow this and additional works at: <https://ink.library.smu.edu.sg/mitb>



Part of the [Artificial Intelligence and Robotics Commons](#), [Databases and Information Systems Commons](#), and the [Technology and Innovation Commons](#)

Citation

VARAKANTHAM, Pradeep. Leveraging artificial intelligence to capture the Singapore rideshare market. (2018).

Available at: <https://ink.library.smu.edu.sg/mitb/6>

This Blog Post is brought to you for free and open access by the School of Computing and Information Systems at Institutional Knowledge at Singapore Management University. It has been accepted for inclusion in MITB Thought Leadership Series by an authorized administrator of Institutional Knowledge at Singapore Management University. For more information, please email cheryl@smu.edu.sg.

LEVERAGING ARTIFICIAL INTELLIGENCE TO CAPTURE THE SINGAPORE RIDESHARE MARKET



PRADEEP VARAKANTHAM

ASSOCIATE PROFESSOR OF INFORMATION SYSTEMS
LEE KONG CHIAN FELLOW

"INCENTIVIZING BOTH THE USAGE AND THE RETURN OF THE BICYCLES THEMSELVES WILL ALSO HELP REDUCE THE TIME TO PROFITABILITY"

BIKE-SHARING programmes face many of the issues encountered by their counterparts in the carsharing world. But in Singapore, there are a number of factors that have a unique impact on the industry. These include the regulatory structure and the significant fines for those companies who do not abide by these regulations. When this is combined with the competitive nature of the industry in one of the world's most dynamic cities, it becomes clear that first movers who leverage machine learning and prediction will come to dominate the industry.

One of the main considerations is, perhaps obviously, the location of the bikes themselves. With three major players in the city, the ad hoc movement of bikes – where users can start and end their rides at almost any location – becomes a critical issue.

Riders always have an incentive to drop bikes at odd places. Supermarkets, bus stops, seaside promenades and busy roads will always be popular. Meanwhile, each bike-sharing company has made their bikes available in many areas, resulting in a very broad distribution, and making it difficult and expensive to reposition them back to 'relevant' locations.

Current GPS technology for detecting whether a bike is parked in the right place is imprecise and contributes to the overall challenge. Bike-sharing companies typically employ trucks to reposition bikes, but this is neither an effective nor efficient way to address errant parking.

Using data gathered over time to predict high-use locations will lend a significant advantage to those who choose to leverage this opportunity. Under current regulations, it will ensure the creation of virtual stations – like bus stops – and more accurate planning of the number of bikes to be left in each location. Data analysis is critical for ensuring improved availability of bikes at the right locations, as it helps identify the demand sources and dropoff points for bikes.

Incentivising both the usage and the return of the bicycles themselves will also help reduce the time to profitability. Singapore's major players in this industry are currently operating at a loss as they attempt to garner market share. Forwardthinking companies can increase take-up of their services by promoting fitness challenges and themed races. This will also help given constraints on the supply of bikes each company can offer.

However, trying to get users to return bicycles to more ‘relevant’ points in the network takes away one of the basic, key advantages of the programme: the ability to pick up and drop off wherever the rider wants. But using predictive analytics to incentivize the return of a bike to one of several locations near a user’s expected destination could still provide benefits to a company’s attempt to place its bikes strategically.

Finally, industry consolidation is a potentially desirable outcome of current government policy. Today, it strictly limits the number of bicycles each company can provide to residents. By joining forces, companies will be able to not only increase their city coverage, but also give them a clearer voice when it comes to proposing the expansion of the number of biking lanes available in the citystate.

With biking lanes more prevalent, Singapore will be able to embrace a greater use of bikes, as is seen today in many European countries. To speed up the process, the same data used to allocate bikes could also be used to create maps showing government officials where the lanes might go to decrease car usage based on company statistics.

Bike sharing is healthy, pollution free and inexpensive. With the right mix of incentives, improved awareness among customers and continued support from the Government, Singapore will be able to reach its full bike-sharing potential.