

Compass Infinity™

TRAFFIC LEARNING & PREDICTIVE PARKING

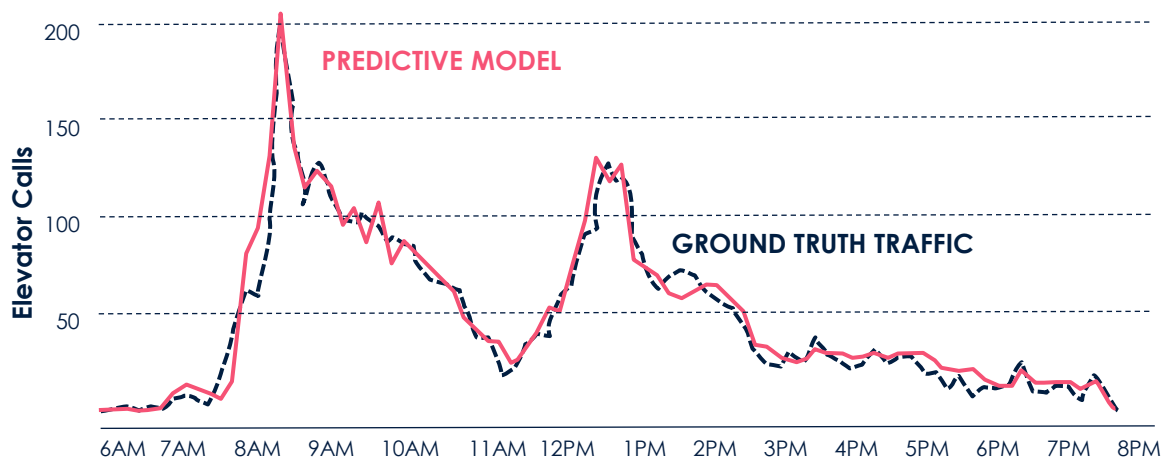
As a leader in elevator manufacturing, installation and service, Otis maintains its competitive edge by developing the technology necessary for our vision of a taller and more connected world. We are building on a rich tradition of innovation and a culture that fosters imagination, enabling the creation of leading-edge technology. With Compass Infinity™ dispatching, our Engineering and Data Science teams are working to bring together state-of-the-art Artificial Intelligence and Machine Learning algorithms to take elevator dispatching to the next level.

TRAFFIC PREDICTION

Dispatching should not be a reactive response where actions are postponed until a passenger places a call for an elevator. Traffic prediction can be leveraged to create an environment that enables predictive algorithms that do not only look at the here and now but are cognizant of possible realization of future calls. AI-based dispatching provides optimal service resulting in a very pleasant passenger experience.

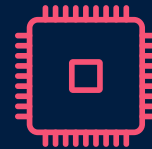
With Compass Infinity, data from multiple sources such as touchscreen destination kiosks, eCall™ Pro smartphone information and integrated turnstile credential swipes are efficiently ingested and harmonically combined to feed state-of-the-art Machine Learning prediction algorithms.

The Compass Infinity destination management system continuously collects data and periodically uses the information to train algorithms. These algorithms adapt to changing traffic conditions generating accurate predictions. Months of traffic data are used to train models that predict future traffic throughout the day using features such as time of day, day of week, and weekday/weekend/holiday information.



Traffic observed in the last few hours is also used to adjust traffic predictions particular to that day.

2 MONTHS DATA RENEWED /WEEK



Data

Ultra-broad set of metadata for sharper decisions

95% ACCURATE TRAFFIC PREDICTIONS



Traffic Prediction Accuracy

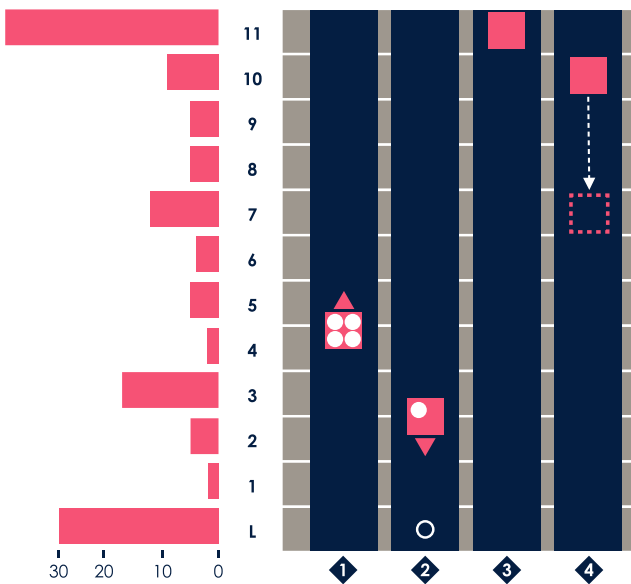
Machine Learning algorithms with autonomous & evolving capabilities

Compass Infinity™

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PREDICTIVE PARKING

Traffic predictions are leveraged when an elevator becomes idle so it can be pre-parked to a floor where demand is expected to materialize. Besides anticipating demand, the predictive parking algorithm also predicts the time and location where non-idle cars will become idle, as well as the likelihood that parked cars will be assigned to other calls.



■ Represents a prediction on the number of calls originating at a given floor at the current time.

- ◆ 1 Car has demand for the foreseeable future
- ◆ 2 Car has demand but is predicted to become idle at floor L
- ◆ 3 Car is idle at floor 11
- ◆ 4 Car has just become idle at floor 10

The best parking location for Car 4 is floor 7 because:

- + Car 3 is already parked at floor 11 and a call at floor 7 is more likely than a second call at floor 11
- + Car 2 is expected to become idle at the lobby floor L and a call at floor 7 is more likely than a second call at floor L
- + Floor 3 and 7 themselves have similar probabilities, but there is a higher likelihood of a new call in the vicinity of floor 7

REDUCE PASSENGER WAIT TIME

With predictive parking, you can reduce passenger wait time as much as 10% versus non-predictive methods. To take full advantage of predictive parking, the algorithm takes a holistic look at predictions of calls originating through the entire set of floors that are served by the elevator group and makes parking decisions that also consider the predicted time and location where non-idle cars will become idle.

This holistic approach of using predicted demands and predicted supply of idle cars enables a robust parking strategy that hedges against numerous demand realization scenarios and reduces waiting time.



**TRAFFIC-INTENSIVE
FLOORS OR FLOOR-
CLUSTERS IDENTIFIED**



**IDLE CAR
PREDICTION**



**HOLISTIC IDLE-CAR
PARKING STRATEGY**



**FASTER ELEVATOR
RESPONSE**