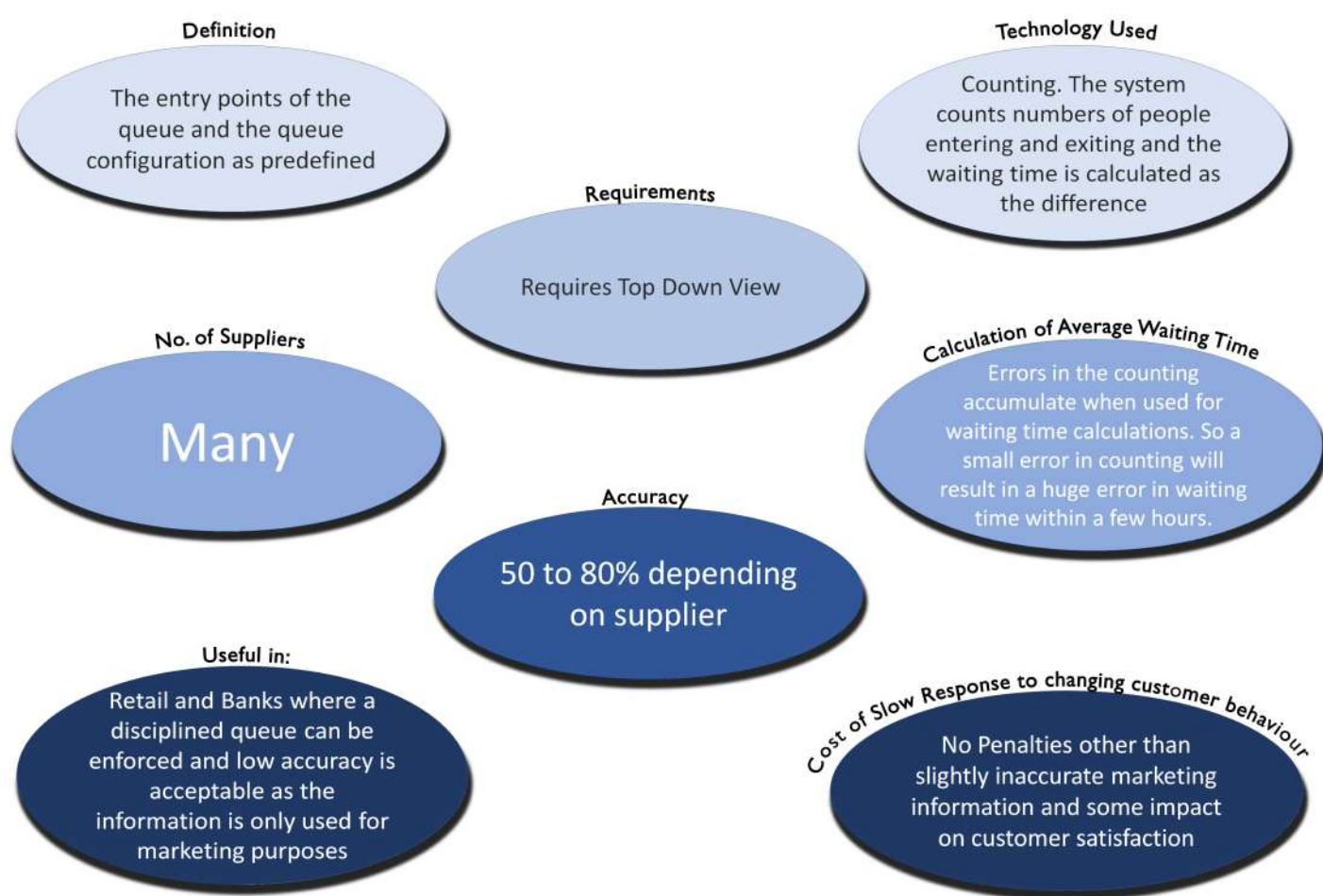# Queue Management Special

There are many technologies available for Queue Management and the method deployed should depend on the user's specific requirements.

The video shows a patented Dwell Time capability that can be very useful in managing queues.
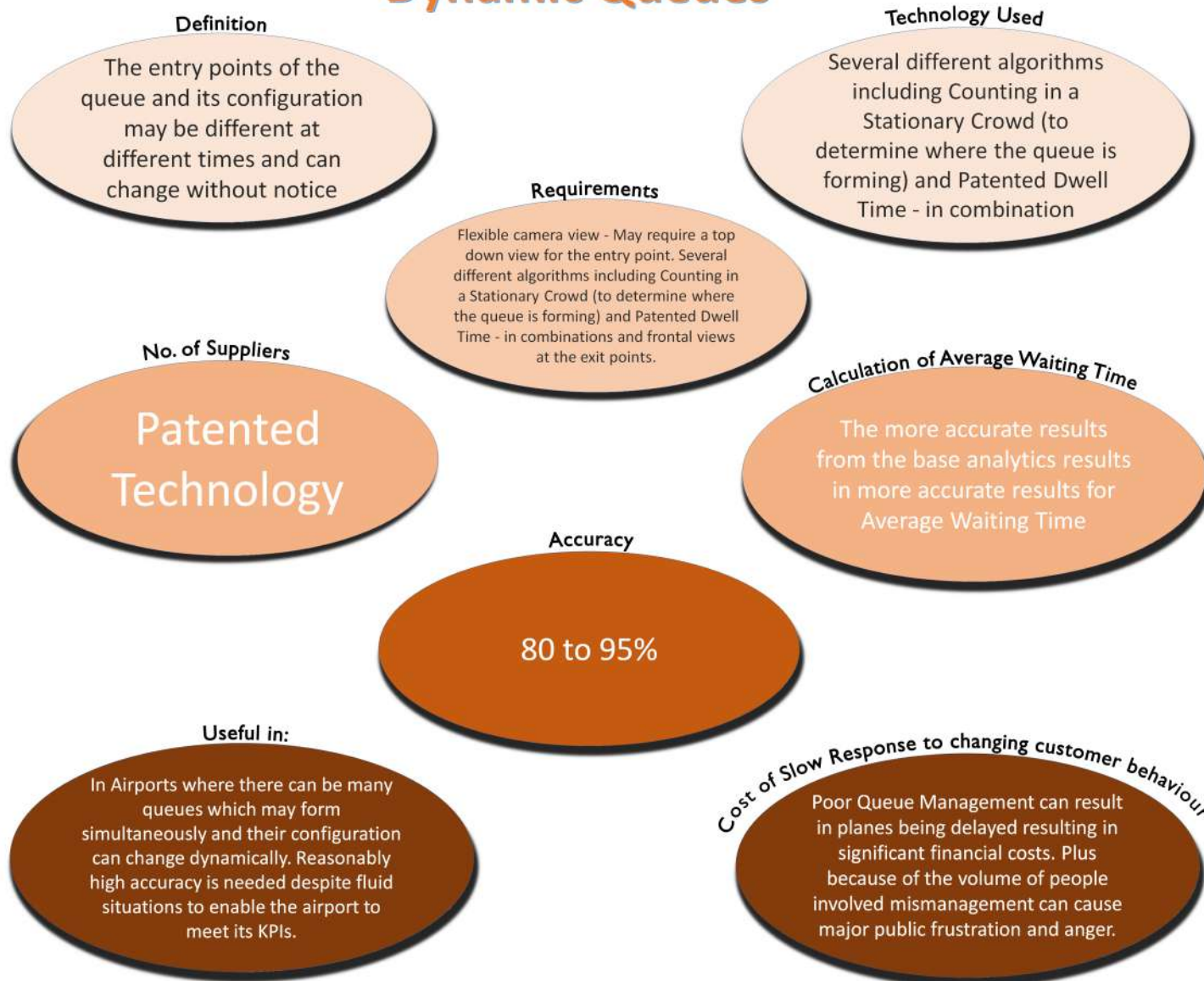
- Business Analytics --- Click here for video.

Below you can see the differences between the two main types of Queue Management and where each should be used.

Static Queues

Definition
The entry points of the queue and the queue configuration as predefined

Technology Used
Counting. The system counts numbers of people entering and exiting and the waiting time is calculated as the difference

Requirements
Requires Top Down View

No. of Suppliers
Many

Calculation of Average Waiting Time
Errors in the counting accumulate when used for waiting time calculations. So a small error in counting will result in a huge error in waiting time within a few hours.

Accuracy
50 to 80% depending on supplier

Useful in:
Retail and Banks where a disciplined queue can be enforced and low accuracy is acceptable as the information is only used for marketing purposes

Cost of Slow Response to changing customer behaviour
No Penalties other than slightly inaccurate marketing information and some impact on customer satisfaction

Dynamic Queues

Definition
The entry points of the queue and its configuration may be different at different times and can change without notice

Technology Used
Several different algorithms including Counting in a Stationary Crowd (to determine where the queue is forming) and Patented Dwell Time - in combination

Requirements
Flexible camera view - May require a top down view for the entry point. Several different algorithms including Counting in a Stationary Crowd (to determine where the queue is forming) and Patented Dwell Time - in combination and frontal views at the exit points.

No. of Suppliers
Patented Technology

Calculation of Average Waiting Time
The more accurate results from the base analytics results in more accurate results for Average Waiting Time

Accuracy
80 to 95%

Useful in:
In Airports where there can be many queues which may form simultaneously and their configuration can change dynamically. Reasonably high accuracy is needed despite fluid situations to enable the airport to meet its KPIs.

Cost of Slow Response to changing customer behaviour
Poor Queue Management can result in planes being delayed resulting in significant financial costs. Plus because of the volume of people involved mismanagement can cause major public frustration and anger.

How do airports use Dynamic Queues

Static queues are only useful in places like the branch of a bank where the environment is stable and it is feasible to establish a disciplined queue.

Please click here for Simple Queue Management for simple situation video.

In many airport environments this may not be possible. Different airlines might open up different counters at varying times. People may join queues or change queues depending on what they perceive may be a faster moving queue. Sometimes a large group may turn up and spontaneously form a queue in an unexpected area.

Despite this the airport authority needs to understand how long it takes for a person to be serviced in the queue.

The traditional counting technologies are not sophisticated enough to analyse anything other than static queues. iOmniscient however, has evolved a number of advanced technologies which in combination can achieve the required results.

For instance, the camera can use a heat map to understand where new queues are forming and which ones are moving fast as shown here:

- Click here for video.

Next having understood where the queue is forming the system can understand where different people are at any given time whether it meets the required service level or whether more check-in counters should be opened as shown here:

- Click here for video.

Finally as shown in the Business Analytics video at the start of this newsletter one can determine how long people go from Point A to Point B and how long they stay at each point. This provides the time required to service individuals.

The cameras are the eyes and one requires the right cameras placed correctly to achieve accurate results. Do not expect general purpose cameras placed for general surveillance to provide the type of advanced information that an airport would require to manage its queues. Note however, that cameras required for intelligent analytics are usually less expensive than those often used for general surveillance.

No human can watch thousands of cameras and make any sense of them – hence the need for intelligent systems. If you have the right cameras in the right place and the right software to analyse the video feed, the efficiency gains for an airport can be large and quantifiable.