

WHY VISITOR CONGESTION BREAKS ATTRACTIONS AT SCALE

(AND WHY FLOW BECOMES UNMANAGEABLE)

Great attractions don't fail because of the ride. They fail because of the crowd.



CONGESTION DOESN'T JUST INCONVENIENCE GUESTS—IT DISRUPTS OPERATIONS, REDUCES CAPACITY, AND DESTROYS THE EXPERIENCE.



OVERCROWDED PATHWAYS

Create bottlenecks, long waits, and frustrated guests.



LOWER ATTRACTION THROUGHPUT

Congestion slows loading, unloading, and overall flow.



HIGHER WAIT TIMES

Guests wait longer—even when rides are operating.



SAFETY RISKS INCREASE

Dense crowds elevate safety risks and operational pressure.

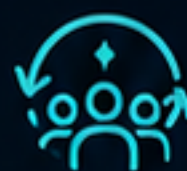


REDUCED CAPACITY AND REVENUE

The park can't utilise its full potential at scale.



THE SOLUTION ISN'T MORE SPACE. IT'S BETTER FLOW.



IMPROVE FLOW



INCREASE CAPACITY



ENHANCE SAFETY



DELIVER BETTER EXPERIENCES

UNDERSTAND CONGESTION. CONTROL FLOW. MAXIMISE EVERY ATTRACTION.

VISITOR CONGESTION INCREASES AT SCALE

When demand outpaces capacity, congestion becomes inevitable.



Too many people. Too little space. **Flow breaks.**

1 DEMAND IS CONCENTRATED, NOT EVEN



Attractions experience:

- Opening-time surges
- Peak midday traffic
- Event or seasonal spikes



This creates:



Large volumes of visitors at once



Immediate pressure on space and systems

Visitors arrive in waves, not a steady flow.

2 BOTTLENECKS LIMIT THROUGHPUT



Every attraction has constraints:

- Entry gates
- Security checkpoints
- Ride capacity
- Narrow walkways



When demand exceeds capacity:



Queues form



Congestion spreads

Capacity is fixed. Demand is not.

3 POPULAR ZONES ATTRACT DISPROPORTIONATE TRAFFIC



Certain areas receive:

- Higher footfall
- Longer dwell times



This leads to:



Localised congestion



Imbalanced crowd distribution

Capularity creates pressure points.

4 MANUAL PROCESSES SLOW MOVEMENT



Many attractions rely on:

- Staff checks
- Ticket scanning
- Bag inspections



These processes:



Take time per visitor



Limit throughput



Create queues

Time per visitor becomes the limiting factor.

5 SPACE IS NOT DESIGNED FOR WAITING



Attractions are designed for:

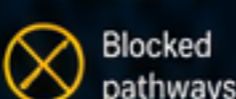
- Flow
- Circulation
- Experience

Not for:

- Large stationary crowds



This leads to:



Blocked pathways



Congestion spillover



Disrupted movement

Designed for flow, not for standstill.

6 SMALL DELAYS COMPOUND QUICKLY



Even minor delays:

- Add seconds per visitor
- Increase queue length
- Slow overall flow



At scale:



Seconds add up



Queues grow

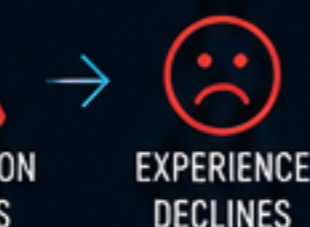
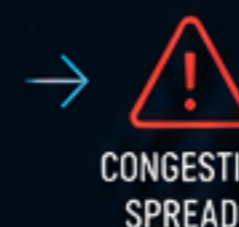
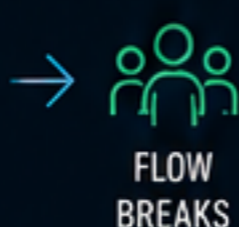


Flow slows

Small inefficiencies create major congestion.



CONGESTION ISN'T JUST CROWDS. IT'S A SYSTEM THAT BREAKS WHEN STRESSED.

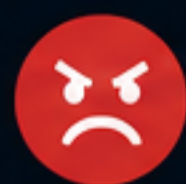


THE SOLUTION:

INCREASE THROUGHPUT. BALANCE FLOW. ELIMINATE BOTTLENECKS. RESTORE THE EXPERIENCE.

THE HIDDEN IMPACT OF VISITOR CONGESTION

Congestion doesn't just create queues — it creates problems that impact guests, operations, safety and revenue.



1. VISITOR EXPERIENCE BREAKDOWN

Congestion leads to:

- Frustration
- Reduced enjoyment
- Negative reviews



BAD EXPERIENCES
Don't bring guests back.



2. REDUCED REVENUE PER VISITOR

When movement slows:

- Less time spent at attractions
- Reduced spend in retail and F&B



LESS TIME. LESS SPEND.
Lower revenue per guest.



3. OPERATIONAL INEFFICIENCY

Staff must:

- Manage crowds
- Control queues
- Resolve issues



MORE WORK. LESS FOCUS.
Resources stretched thin.



4. SAFETY AND CROWD RISK

High-density areas create:

- Restricted movement
- Increased safety risk
- Emergency response challenges



HIGHER RISK.
Greater responsibility.



5. REDUCED CAPACITY EFFICIENCY

Congestion reduces:

- Effective throughput
- Attraction performance
- Overall capacity utilisation



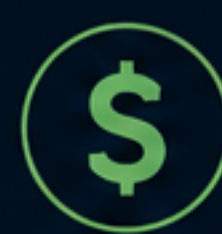
CAPACITY WASTED.
Potential left unrealised.



CONGESTION IS THE SILENT KILLER OF PERFORMANCE.



HAPPIER GUESTS
BETTER EXPERIENCES



HIGHER SPEND
MORE REVENUE



SMOOTHER OPERATIONS
HAPPIER TEAMS



SAFER ENVIRONMENT
LOWER RISK



BETTER CAPACITY USE
STRONGER RESULTS

UNDERSTAND THE IMPACT. **REDUCE** CONGESTION. **DELIVER** EXCEPTIONAL EXPERIENCES AT SCALE.

WHY TRADITIONAL FIXES DON'T WORK

Most traditional approaches treat the symptoms, not the cause. They don't solve congestion—they just manage it.

❌ ADD MORE STAFF



- Increases cost
- Does not increase throughput significantly

❌ EXPAND QUEUE AREAS



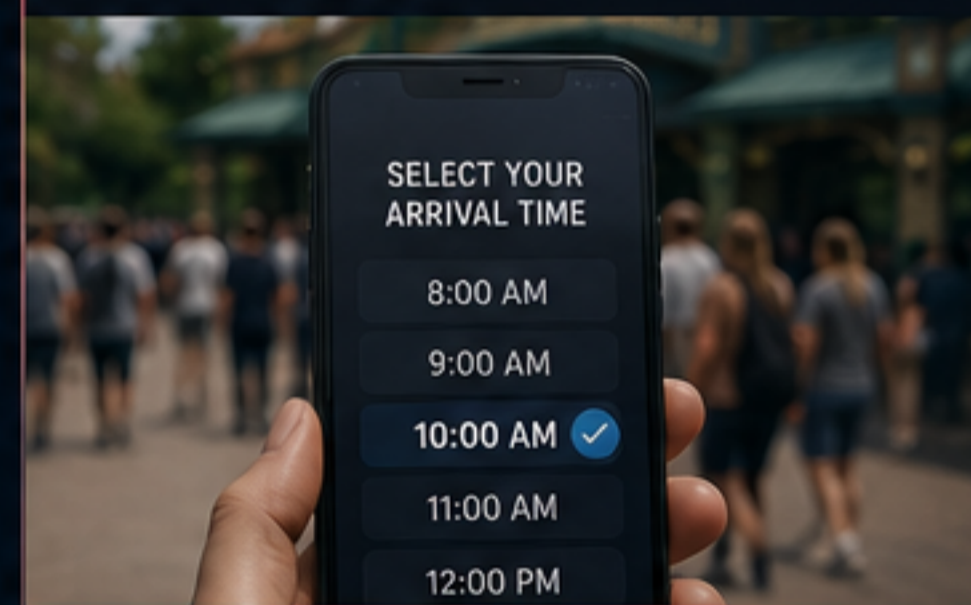
- Uses valuable space
- Does not improve flow

❌ IMPROVE SIGNAGE



- Helps navigation
- Does not reduce congestion

❌ STAGGER ENTRY TIMES



- Difficult to enforce
- Limited behavioural impact



THE PROBLEM ISN'T EFFORT. IT'S SYSTEM DESIGN.

As long as friction and bottlenecks exist in the system, more staff, bigger queues, better signs, or staggered entry times won't solve the problem.

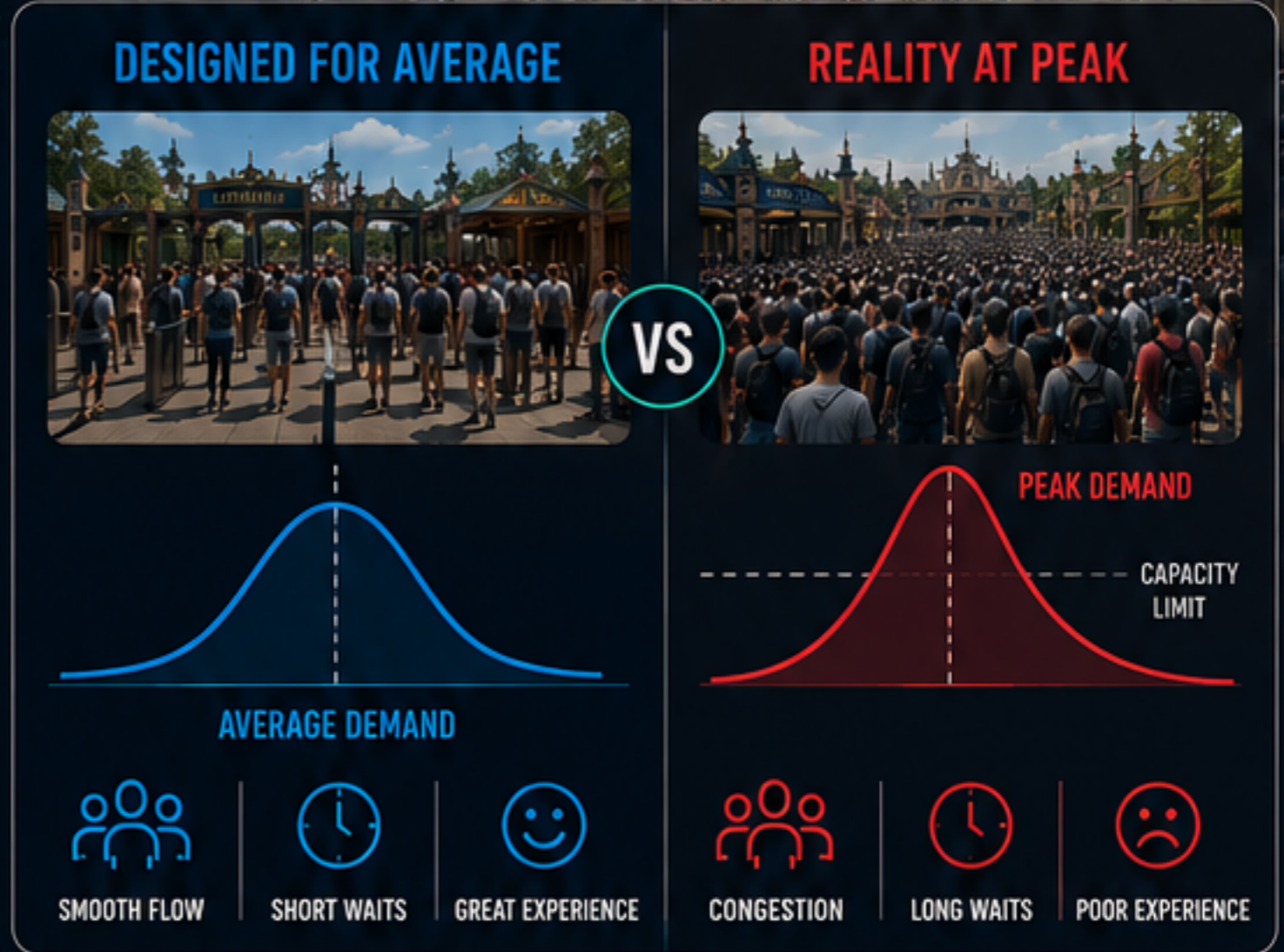


THE SOLUTION IS SIMPLE: REMOVE FRICTION BEFORE CONGESTION FORMS. IMPROVE FLOW. INCREASE THROUGHPUT. DELIVER BETTER EXPERIENCES.



THE CORE PROBLEM: SYSTEMS ARE DESIGNED FOR AVERAGE FLOW

Visitor congestion happens because:
Attractions are designed for
average demand, not peak demand.



AT SCALE:

DEMAND SPIKES
High volumes arrive in short periods.

CAPACITY IS EXCEEDED
Systems reach their limit. Throughput can't keep up.

CONGESTION BECOMES UNAVOIDABLE
Queues grow. Experience suffers. Opportunities are lost.

THE PROBLEM ISN'T PEOPLE. IT'S A SYSTEM DESIGNED FOR THE WRONG DEMAND.

THE BIGGEST HIDDEN DRIVER: FRICTION

Congestion is driven by:

BAG HANDLING Bags slow screening, movement, and entry.	SECURITY CHECKS Manual checks create bottlenecks and delays.	MANUAL PROCESSES Human-dependent tasks limit throughput.	STORAGE BOTTLENECKS Limited storage creates queuing and congestion.

REMOVE FRICTION...



AND FLOW IMPROVES DRAMATICALLY.

- ✓ Faster entry
- ✓ Better throughput
- ✓ Shorter waits
- ✓ Happier guests
- ✓ Higher revenue



THE SOLUTION ISN'T MORE CAPACITY. IT'S SYSTEMS THAT REMOVE FRICTION BEFORE THE QUEUE FORMS.



THE SCALABLE SOLUTION: DESIGN FOR CONTINUOUS FLOW

The most efficient attractions don't manage congestion. They prevent it.



DESIGN FOR FLOW.
DELIVER BETTER EXPERIENCES.

✓ SMART LOCKER SYSTEMS FOR ATTRACTIONS

Smart lockers reduce congestion by removing **key friction points**.



BUILT FOR SCALE



SECURE



SEAMLESS

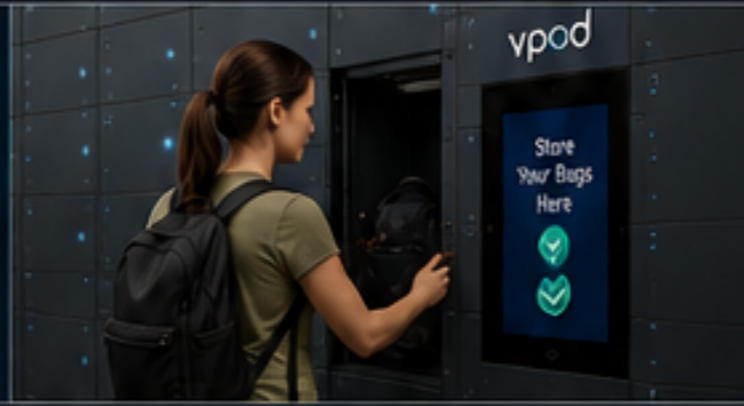


IMPACTFUL



1 REMOVE BAGS BEFORE ENTRY

- Faster security processing
- Reduced delays



FASTER ENTRY.
LESS WAITING.



2 ELIMINATE STORAGE QUEUES

- No cloakroom congestion
- No waiting



NO QUEUES.
NO CONGESTION.



3 ENABLE PARALLEL USAGE

- Multiple users simultaneously
- No bottlenecks



MORE CAPACITY.
MORE FLOW.



4 IMPROVE MOVEMENT THROUGH SPACES

- Less crowding
- Faster circulation



SMOOTHER MOVEMENT.
BETTER FLOW.



5 REDUCE PRESSURE ON KEY ZONES

- Distribute demand
- Improve flow



BALANCED DISTRIBUTION.
OPTIMAL FLOW.



DESIGN FOR CONTINUOUS FLOW.
PREVENT CONGESTION. MAXIMISE EVERY MOMENT.



REMOVE FRICTION



IMPROVE FLOW



DELIVER BETTER EXPERIENCES



DRIVE MORE REVENUE

REAL OPERATIONAL IMPACT

With improved flow systems:

<p>VISITOR CONGESTION IS REDUCED</p> <p>Smoother movement across the park.</p> <p>-35% CONGESTION</p> <p>BEFORE </p> <p>AFTER </p>	<p>QUEUE LENGTHS DECREASE</p> <p>Shorter waits, happier guests.</p> <p>-40% AVERAGE QUEUE TIME</p> <p>BEFORE </p> <p>AFTER </p>	<p>THROUGHPUT INCREASES</p> <p>More guests served, faster.</p> <p>+28% GUESTS PER HOUR</p> <p>BEFORE </p> <p>AFTER </p>	<p>SAFETY IMPROVES</p> <p>Less crowding, lower risk.</p> <p>-25% SAFETY INCIDENTS</p> <p>BEFORE </p> <p>AFTER </p>	<p>GUEST SATISFACTION RISES</p> <p>Better experience, stronger loyalty.</p> <p>+32% SATISFACTION SCORE</p> <p>BEFORE </p> <p>AFTER </p>
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THE BOTTOM LINE

Visitor congestion is not just a crowd issue. It is a **flow design problem**.

AT SCALE:



DEMAND SPIKES
Too many visitors arrive at once.



BOTTLENECKS FORM
Systems can't handle the volume.



MOVEMENT STOPS
Queues grow. Experience suffers.



The solution is not managing crowds better. It's designing systems that keep people moving.

THE SOLUTION: DESIGN FOR CONTINUOUS FLOW



Remove friction before it starts



Balance demand with capacity



Eliminate bottlenecks



Enable smooth, continuous movement



Deliver better experiences at every scale



BETTER FLOW. HIGHER CAPACITY. HAPPIER GUESTS. STRONGER RESULTS.



VISITOR BAG SMART LOCKER

4-STEP PROCESS

Secure. Simple. Seamless.



Secure Storage



Save Time
Skip Queues



Better Flow
Better Experience

1 REGISTER YOUR BAG



Tap the screen and follow the simple steps.

Receive a digital QR code.

2 STORE YOUR BAG



Open the locker, place your bag inside and close the door.

Your bag is securely locked.

3 ENJOY YOUR EXPERIENCE



Enjoy attractions, rides, dining and experiences hands-free and worry-free.

Move freely. No queues. No hassle.

4 RETRIEVE YOUR BAG



Scan your QR code at any locker kiosk and collect your bag.

Quick. Easy. Secure.



REDUCE CONGESTION

Faster entry.
Smoother flow.



IMPROVE SAFETY

Remove bags from crowded spaces.



INCREASE THROUGHPUT

Higher capacity.
Better experiences.



HAPPIER GUESTS

Less waiting.
More enjoyment.



Smart lockers remove friction at entry and throughout your park — creating continuous flow and exceptional guest experiences.