



LSSGB – Case Study

UrbanNest Workspaces (HYD)

Lean Six Sigma Project

Business Case

Business Case

UrbanNest Workspaces (name changed) operates premium co-working spaces in Hyderabad for freelancers, startups, and remote teams, focused on providing a quiet, professional, and reliable work environment.

*Over the past three months, customer feedback and app reviews have shown rising dissatisfaction, mainly driven by **meeting room booking issues**. VOC analysis shows that **78% of total complaints come from booking-related problems**, including unavailable rooms despite confirmations, double-bookings, unclear booking communication, and delayed front-desk support. This has directly contributed to falling app ratings and negative reviews.*

*UrbanNest evaluates service quality using only **external Voice of Customer (VOC)** data, with no internal operational metrics. Based on complaint concentration and declining reviews, management has defined **Meeting Room Booking Reliability** as the primary CTQ and set a clear target: **reduce booking-related complaints from 78% to below 25%**, and improve overall member satisfaction to **≥ 4.3 out of 5**.*

01

Define Phase

Voice of Customer (VOC)

“Meeting rooms appear available in the app but are already occupied.”

“Sonetimes background noise from calls and informal meetings.”

“The location is convenient for daily commuting.”

“The onboarding process is smooth and professional.”

“Front desk response to booking issues is slow.”

“The booking system doesn’t send confirmation messages.”

“Even premium members can’t get rooms during peak hours.”

“Staff step in to diplomatically resolve room and noise disputes, preventing member-to-member friction.”

“Rooms remain blocked even when there are no-shows or late cancellations”

“Seating is comfortable for long work hours.”

“Internet speed is good during off-peak hours.”

“Community events are well organized.”

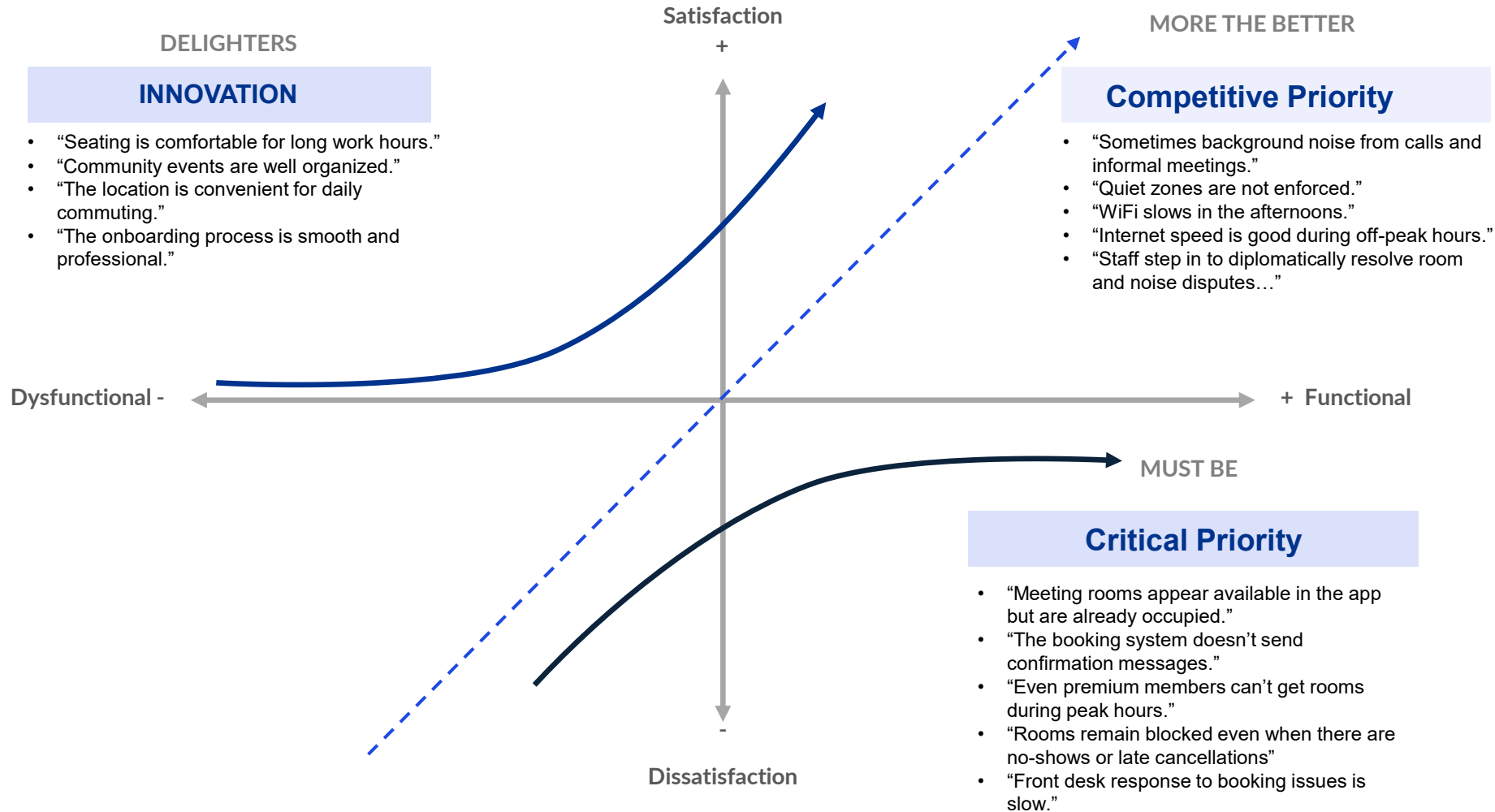
“Quiet zones are not enforced.”

“WiFi slows in the afternoons.”

Affinity Chart

Meeting Rooms & Booking System	Environment	Connectivity and Technology	Staff
"Meeting rooms appear available in the app but are already occupied."	"Sometimes background noise from calls and informal meetings."	"WiFi slows in the afternoons."	"The onboarding process is smooth and professional."
"The booking system doesn't send confirmation messages."	"Quiet zones are not enforced."	"Internet speed is good during off-peak hours."	"Front desk response to booking issues is slow."
"Even premium members can't get rooms during peak hours."	"Seating is comfortable for long work hours."	"The location is convenient for daily commuting."	"Staff step in to diplomatically resolve room and noise disputes, preventing member-to-member friction."
"Rooms remain blocked even when there are no-shows or late cancellations"	"Community events are well organized."		

Kano Model



Project Charter

Project Name

Improving Meeting Room Booking Reliability at UrbanNest Workspaces

Project Owner

Bhavya Roy

Project Team

Urban Nest Management System

Business Case

Urban Nest Workspace located in Hyderabad has seen a decline in Customer satisfaction and an increase in the negative reviews online over last 3 months. This issue has led to high customer attrition and led to loss of trust. Therefore, a six Sigma project is being initiated to improve service quality and revive the workspace again.

Problem Statement

Customers are Experiencing booking failures such as double-bookings, false availability and delayed support resolution. This results in operational disruptions, member frustration, declining app ratings, and erosion of customer trust.

In Scope/Out of Scope

In Scope

Booking system & app communication, Front-desk booking support

Out of Scope

Physical infrastructure changes
Staffing and hiring decisions
Pricing or membership policy changes

Goal Statement (SMART)

Within a **3-month timeframe**, reduce booking-related complaints from **78% to below 25%**, by improving booking accuracy, communication reliability, and front-desk resolution speed, without increasing operational costs or degrading service quality.

Mile Stones

Phase	Start Date		End Date	
	Planned	Actual	Planned	Actual
Define	01.02.2026	NA	11.02.2026	NA
Measure	12.02.2026	NA	07.03.2026	NA
Analyze	08.03.2026	NA	27.03.2026	NA
Improve	28.03.2026	NA	25.04.2026	NA
Control	26.04.2026	NA	01.05.2026	NA

Project Team

Project Lead – Bhavya Roy
Operations Head – Raghav Sharma
IT Systems Manager – Neeraj Malhotra
Customer Experience Manager – Pooja Iyer
Front Desk Supervisor – Arjun Rao
Process Improvement Associate – Nikhil Verma
App Systems Analyst – Aditi Kulkarni

Process Map

Supplier	Inputs	Process	Outputs	Customer
Member	Booking request, preferences	Submit room booking request	Booking request logged	Front desk supervisor/App
Front desk supervisor	Booking request, room schedule data	Verify availability & allocate room	Approved / corrected booking	Member
Member	Approved booking details	Use meeting room as scheduled	Service Usage	UrbanNest Management
Member	Service Experience	Provide feedback/raise complaint	Constructive feedback(app, verbal, or online)	UrbanNest Management

02

Measure Phase

Data Analysis

Bhavya Roy, Raghav Sharma, Pooja Iyer, Nikhil Verma, and Aditi Kulkarni convened to define a structured approach to measure the CTQ: **booking confirmation availability**

Bhavya Roy, Project Lead, initiated the discussion:

“Our priority is to understand where booking confirmations fail or get delayed. The data must clearly distinguish successful bookings from defective ones.”

Raghav Sharma, Operations Head, emphasized operational visibility:

“We should track room availability, double bookings, etc. These directly reflect process breakdowns.”

Pooja Iyer, Customer Experience Manager, added a customer-centric lens:

“Member type and booking outcome are critical. Premium members experiencing defects would signal a serious service gap.”

Nikhil Verma, Process Improvement Associate, aligned the data to Six Sigma metrics:

“With booking outcome already logically derived, we can directly count total defects, calculate DPO and DPMO, and build Pareto charts by failure type.”

Aditi Kulkarni, App Systems Analyst, ensured analytical readiness:

“Consistent booking IDs, timestamps, and failure classifications will allow clean segmentation during root cause analysis.”

Together they finalized a clean 12 column format and agreed to do a data Collection, to be collected from 12th Feb to 7th March.

Data To Be Collected

- Date
- Booking ID
- Member Type (Standard / Premium)
- Booking Channel (App / Front Desk)
- Confirmation Sent (Y/N)
- Confirmation Delay (mins)
- Room Available at Scheduled Time (Y/N)
- Double Booking Occurred (Y/N)
- Front Desk Intervention Required (Y/N)
- Resolution Time (mins)
- Booking Outcome (Successful / Defective)
- Failure Type

Data Sampling Strategy

A stratified time-based sampling approach was adopted for data collection. Booking data was collected across predefined strata including booking channel (app vs front desk), member type (standard vs premium), and operating periods (peak vs non-peak hours). This ensured adequate representation of all major sources of process variation affecting booking confirmation reliability.

Sample Size Calculations

Since Data is discrete, we'll be using proportion-based sample size formula: $n = (Z^2 \times p \times (1 - p)) / E^2$
where :

n = Required sample size

Z = Z-value based on confidence level

p = Estimated proportion of defects

E = Margin of error

Values used according to the industry Standards:

- Confidence Level: 95% (Z = 1.96)
- Estimated defect proportion (p): 0.5 (For max sample size)
- Margin of Error (E): $\pm 5\%$ (0.05)

$$n = (1.96^2 \times 0.5 \times 0.5) / (0.05^2)$$

$$n = (3.8416 \times 0.25) / 0.0025$$

$$n = 0.9604 / 0.0025$$

$$n = 384.16$$

Therefore, in the sample size collection we have to collect at least 385 samples.

Descriptive Statistics

Figure 1
Booking Outcome

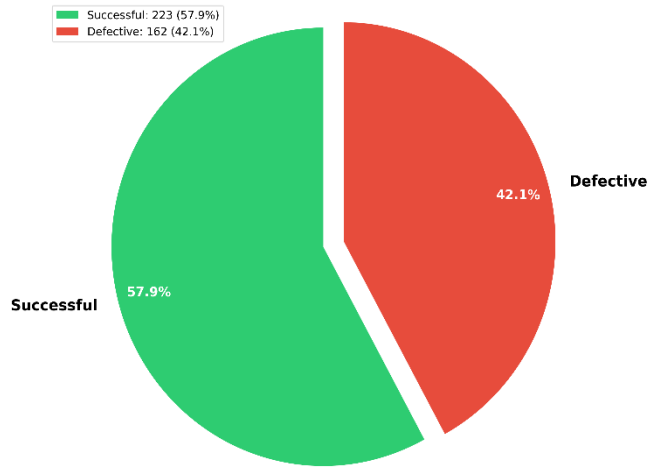


Figure 1: 42.1% of bookings are defective, indicating a high baseline failure rate and confirming that booking confirmation reliability is currently unstable and incapable of consistently meeting customer expectations.

Figure 2: Room unavailability is the dominant defect driver, accounting for the highest frequency of failures, followed by missing confirmations, indicating that availability accuracy and confirmation communication are the primary contributors to booking unreliability.

Figure 3: Defect rates are comparable across standard (43.4%) and premium (40.7%) members, indicating that booking reliability issues are systemic rather than customer-segment specific, and not isolated to a particular membership tier.

Overall descriptive analysis reveals a high and consistently distributed defect rate, confirming that booking confirmation reliability is a process-level issue requiring root cause analysis.

Figure 2

Defect Type Distribution

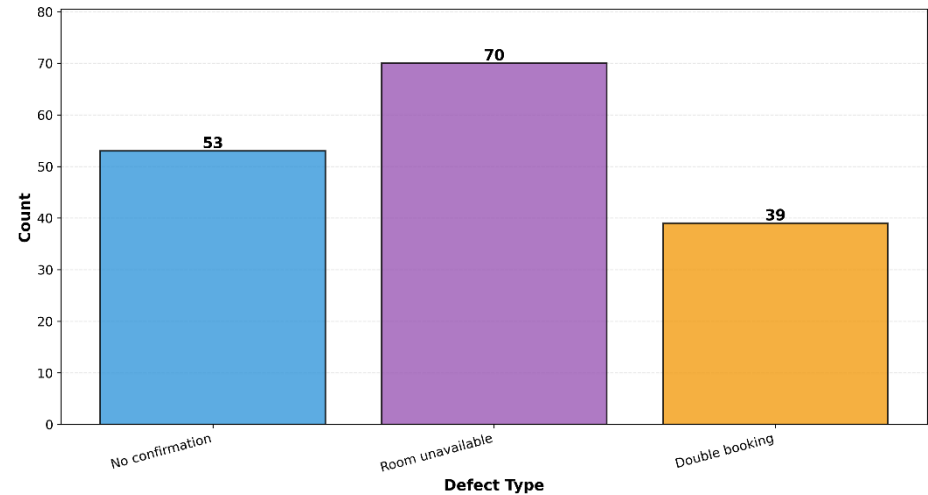
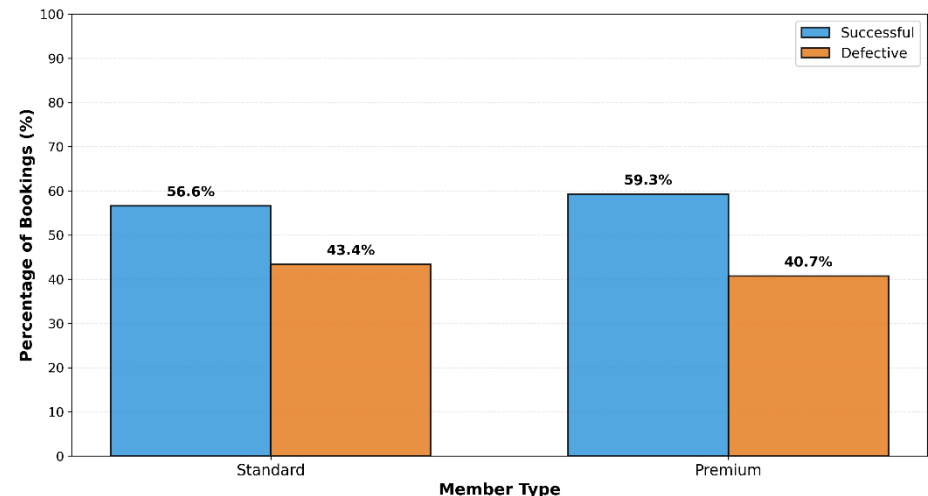


Figure 3

Reliability: Premium vs Standard Members



Baseline Performance

	Value	
1 Number Of Units Processed	N=	385
2 Total Number Of Defects Made (Include Defects Made And Later Fixed)	D=	245
3 Number Of Defect Opportunities (Per Unit) <i>For calculating PPM Defect Opportunities = 0</i>	O=	4
4 Defects Per Million Opportunities	DPMO/PPM	159091
5 Look Up Process Sigma In Abridged Sigma Conversion Table	Sigma Level (Long Term)	1.00
	Sigma Level (Short Term)	2.50

Defect Source	Number of Defects
No Confirmation Sent	53
Room Unavailable at Scheduled Time	70
Double Booking	39
Confirmation Delay (Additional)	83
TOTAL DEFECTS	245

Opportunity	Description
O1	Confirmation not sent
O2	Confirmation delayed
O3	Room unavailable at scheduled time
O4	Double booking
Opportunities	

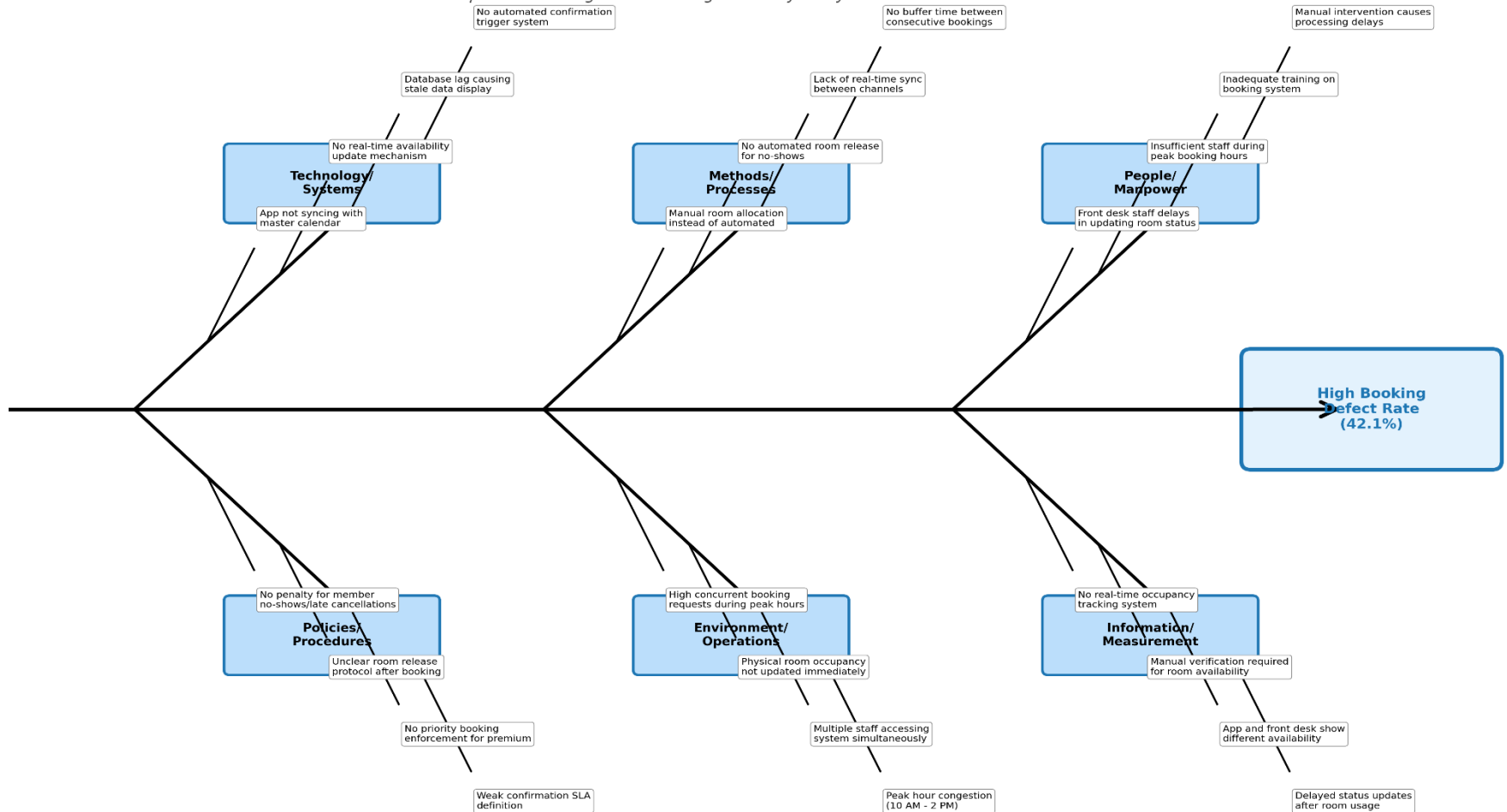
The calculated DPMO of 159,091 reflects a low process capability ($\approx 2.5\sigma$ short term), confirming that booking confirmation reliability is significantly below Six Sigma standards and requires immediate process improvement.

03

Analyze Phase

Process Door Analysis - Fishbone

UrbanNest Workspaces - Meeting Room Booking Reliability Analysis



Problem Statement: 42.1% booking defect rate with major issues in room unavailability (70), confirmation delays (83), missing confirmations (53), and double bookings (39)

Process Door Analysis 6M

Measurement

- Are booking availability status measurements accurate and real-time?
- Is room occupancy data synchronized between app and physical status?
- Are booking confirmation timestamps tracked and monitored?
- Is defect data (42.1% failure rate) being collected and analyzed?

Method

- Are standard booking procedures (SOPs) documented and automated?
- Is the room allocation process logical, efficient, and error-free?
- Are no-show and late cancellation protocols defined and enforced?
- Are real-time sync procedures between channels established?

Machinery

- Is the booking app syncing with master calendar in real-time?
- Are automated confirmation triggers functioning as intended?
- Is the database optimized to prevent lag and stale data?
- Is there preventive maintenance for the booking system?

Procedures

- Are peak hour booking loads (10 AM - 2 PM) within system capacity?
- Is concurrent booking request handling stable and controlled?
- Are physical room usage patterns tracked and factored into planning?
- Are seasonal or time-based demand variations considered?

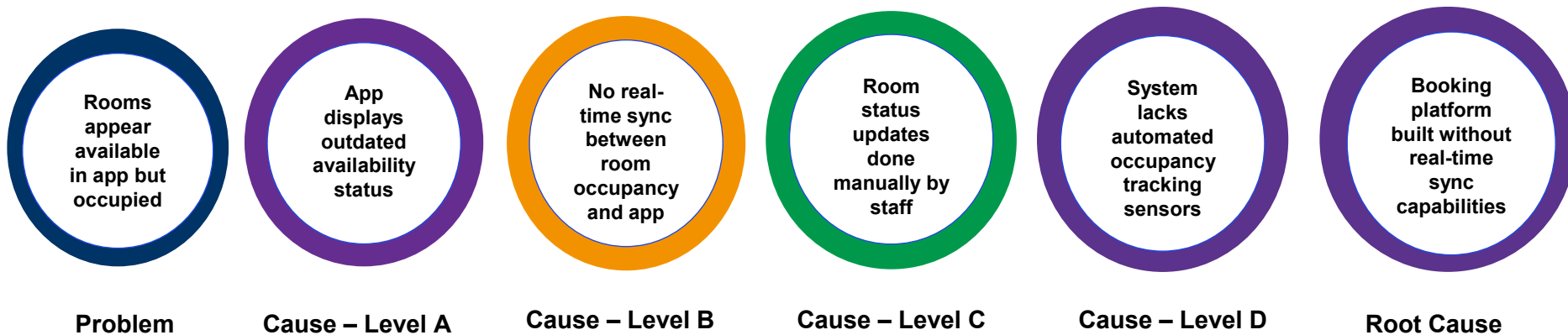
Operations

- Are front desk personnel adequately trained on booking systems?
- Are responsibilities for room status updates clearly communicated?
- Is there a performance tracking system for booking support staff?
- Are staffing levels appropriate for peak booking hours?

Information

- Are booking inputs (member details, time slots) verified before processing?
- Is master calendar data quality maintained and updated in real-time?
- Are confirmation message templates standardized and error-free?
- Is traceability maintained for all booking transactions and changes?

Process Door Analysis – 5 Why



The root cause analysis reveals that room unavailability defects and confirmation delays stem from a fundamental **system architecture limitation**: the booking platform was designed without real-time synchronization capabilities between physical room occupancy and app availability display. This architectural gap forces reliance on manual status updates by front desk staff, creating lag time and data inconsistency that directly contributes to 153 defects (62.4 % of total defects).

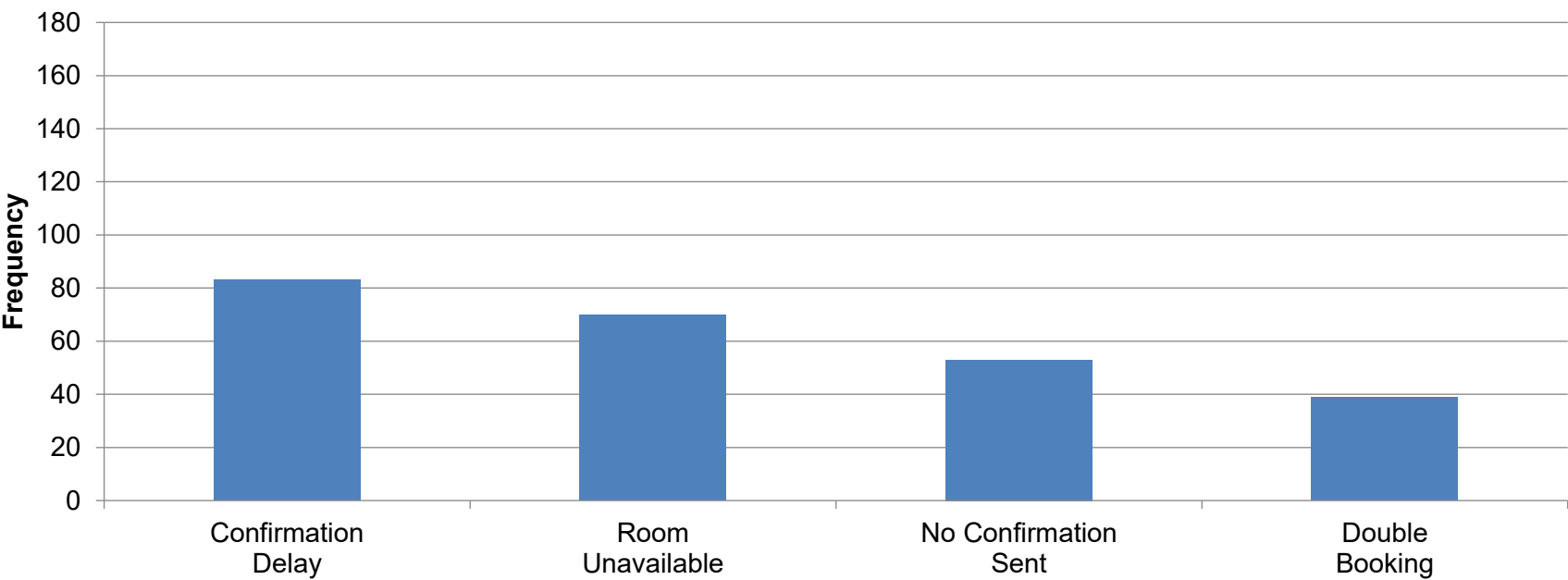
Key Process Input Variables (KPIVs) Identified:

- Real-time sync mechanism (presence/absence)
- Manual update frequency and reliability
- Staff response time for status changes
- System architecture design specifications

Actionable Insight: To eliminate this defect category, UrbanNest must invest in automated real-time sync infrastructure that connects physical room occupancy sensors with the booking app database, removing manual intervention from the critical path.

Process Door Analysis - Pareto

Pareto Chart of Defect Type

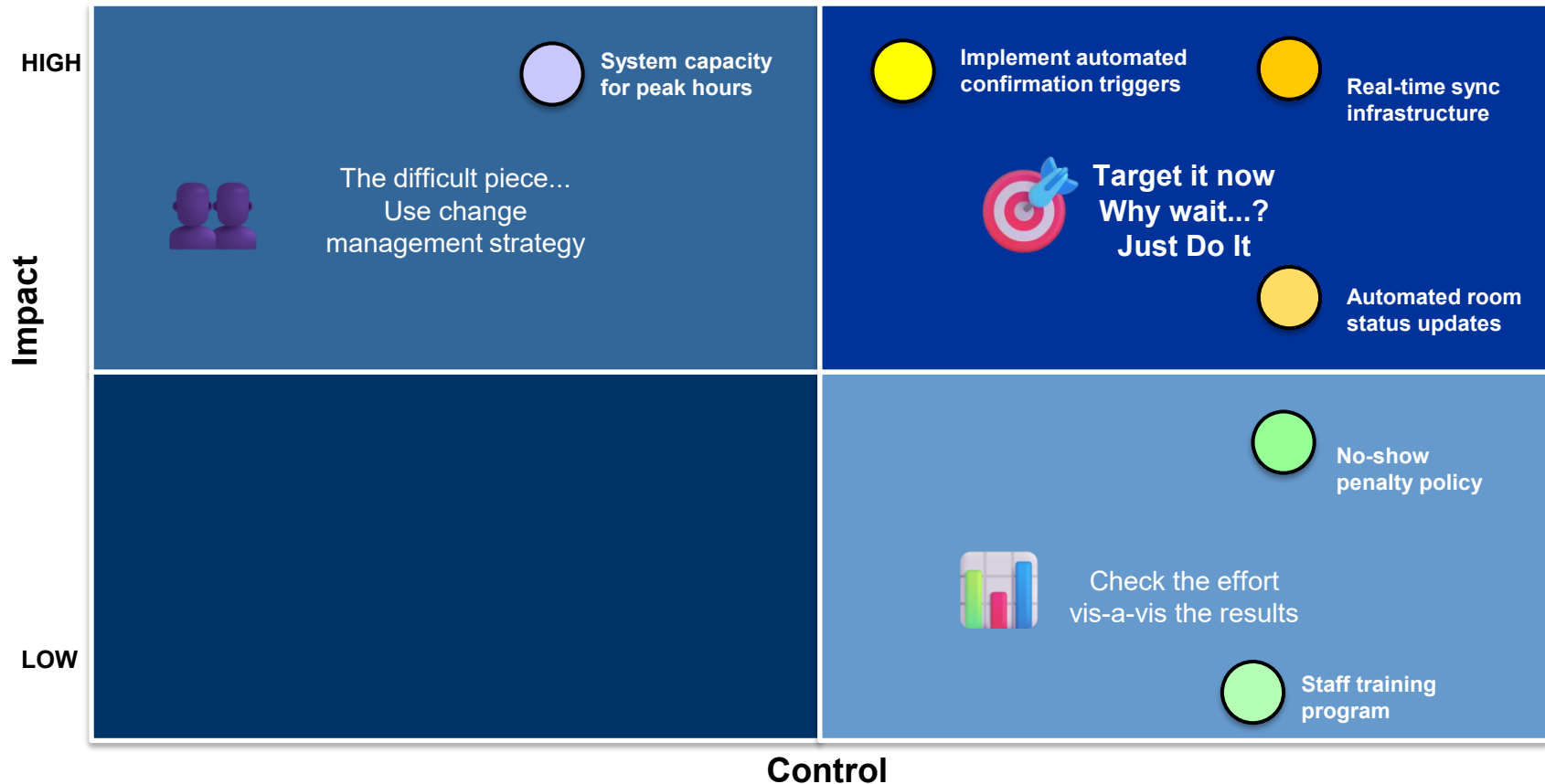


Defect Type	Confirmation Delay	Room Unavailable	No Confirmation Sent	Double Booking
Frequency	83	70	53	39
Percent	33.9	28.6	21.6	15.9
Cum %	33.9	62.4	84.1	100.0

The Pareto analysis demonstrates that 2 out of 4 defect types (50%) contribute to 62.4% of total failures, validating our focus on Confirmation Delay and Room Unavailability as Priority 1 root causes. Solving these automation-related issues will deliver maximum impact toward achieving our goal of reducing booking defects below 25%.

Control impact matrix (Causes)

When we know the possible root causes...can we attack all?



The Control-Impact Matrix identifies **three Priority 1 root causes** (automated confirmation triggers, real-time sync infrastructure, and automated room status updates) that are both highly impactful and fully within UrbanNest's control. All three causes are **automation-related** and directly address the top 2 defects responsible for 62.4% of total booking failures. Implementing these solutions in the Improve phase will yield maximum defect reduction with minimal dependency on external factors, making them the optimal focus for immediate intervention.



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