How to improve Airport Capacity?

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Introduction

- By 2035, 7 of 10 fastest growing aviation markets in Africa

- ... with nearly 300 mil. PAX

- ... but many airports built in the 1960s and 70s leading to...

- ... congested airport facilities with limited capacity

- Slow progress to build new infrastructure urges Airports to increase capacity of existing facilities
How to improve Airport Capacity?

- Flexible, Centralized Infrastructure
- Optimized Layout of Facilities
- Process Optimization
- Technology Utilization
- Infrastructure Maintenance
- Resource Management

Capacity Improvement
Centralization of terminal infrastructure enhances:

- Peak capacities (e.g. of checkpoints)
- Resource utilization (e.g. of security lanes, staff)
- Space efficiency (e.g. checkpoints, F&B)
Flexible design and usage of terminal infrastructure enhances

- Peak capacities (e.g. international or domestic traffic)
- Resource utilization (e.g. gates, stands)
- Space efficiency (e.g. concourse area)
Capacity Optimization of Check-In

- **Common-use facilities (counters or kiosks)** for improved space and resource utilization and reduction of queues
- **Off-airport check-in incl. baggage** (hotel, station, home) to reduce capacity needs
- **Home printed or permanent bag tags** to reduce process times at the airport
- **Flexible layout** of check-in hall is key to optimize capacity as needed
Layout Optimization of Check-In Areas

- e.g. 50% common-use automated bag-drop (bag-tag at kiosk); **50% staffed counters** for special services or priority passengers
- **Reduced size** of check-in hall with optimized passenger flow
Optimization of Security Checkpoints

- **Efficient Space and Resource Utilization** through employment of KPIs for
  - throughput/sqm
  - throughput/meter (width or length of checkpoint)
- Tailor-made checkpoint layout needs to be *designed to fit well into the Terminal*
- Processes and Staff need to harmonize with the layout (specific process descriptions and training manuals)
Technology Utilization

- **Automated boarder control** to enhance capacity and space utilization
- **Automated bag drop** to enhance space and resource utilization
- **Mobile agents** for check-in and printing of boarding passes
- **E-gates with boarding pass readers** for various technologies (NFC, QR-Code, RFID, biometrics) to reduce queues
- **Systems for capacity and flow management**
Maintaining the Infrastructure

- Sustaining airport capacity through maintenance
  - Regular checks, reporting and quality control
  - Preventative maintenance for critical systems and infrastructure
  - SLA’s with defined response times and failure rates

- Well-maintained facilities and systems are less prone to failure or disruption

- Key factors for maintenance: Well defined responsibilities, availability of funding, qualified staff and spare parts
Maintenance supported by SLAs and KPIs

- **Formulation of SLAs and KPIs**
  - **KPIs** act as performance metrics in accordance to pre-defined performance level objectives
  - SLAs include: responsibilities, maintenance cycles, rating systems, minimum response times, maximum failure rates etc.

- Deployment of penalties for underperforming service providers

- Integration of regular scheduling and quality control procedures
Enhancing Airport Capacity

How to find the suitable Measures?

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1. Capacity Assessment
   - Detection of Bottlenecks

2. Determination of Capacity Requirements, Target State
   - Development and evaluation of Solutions

3. How to find the suitable Measures?
   - Infrastructure
   - Centralization
   - Solutions
   - Infrastructure Maintenance
   - Technology
   - Common-use Infrastructures
   - Optimized Layout of Facilities

Journey to the airport:
- Baggage Drop
- Security
- Boarding
- Departure
- Shopping & Waiting
- Traveling

Journey from airport:
- Baggage reclaim
- Security
- Boarding
- Arriving at Terminal
- Arriving at Landside
- Transfer (incl. Checkpoints)
- Arriving at Terminal
Thank you very much for your attention!

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