How to improve Airport Capacity?

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Introduction

- By 2035, **7 of 10 fastest growing aviation markets in Africa**
- … but many airports **built in the 1960s and 70s** leading to…
- … with nearly **300 mil. PAX**
- … **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?

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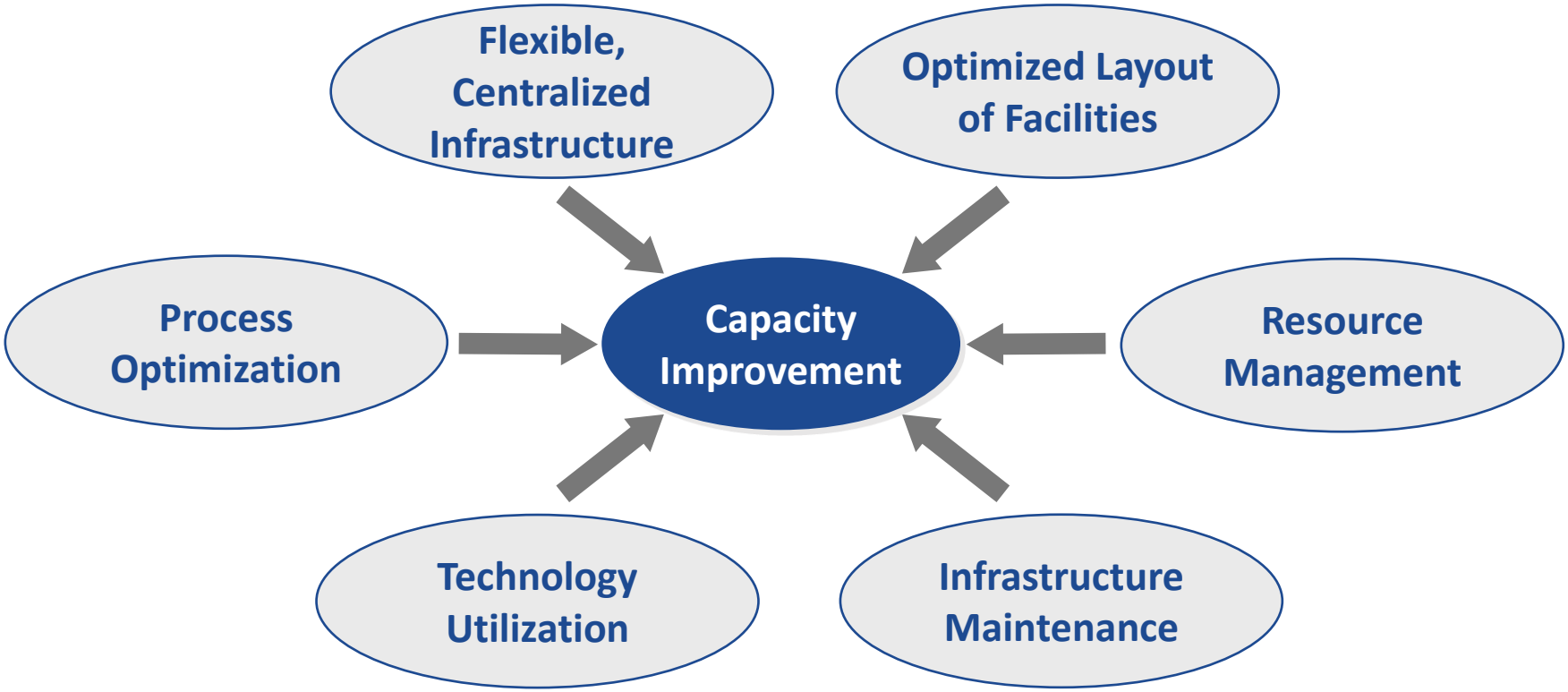

Centralization of Infrastructure

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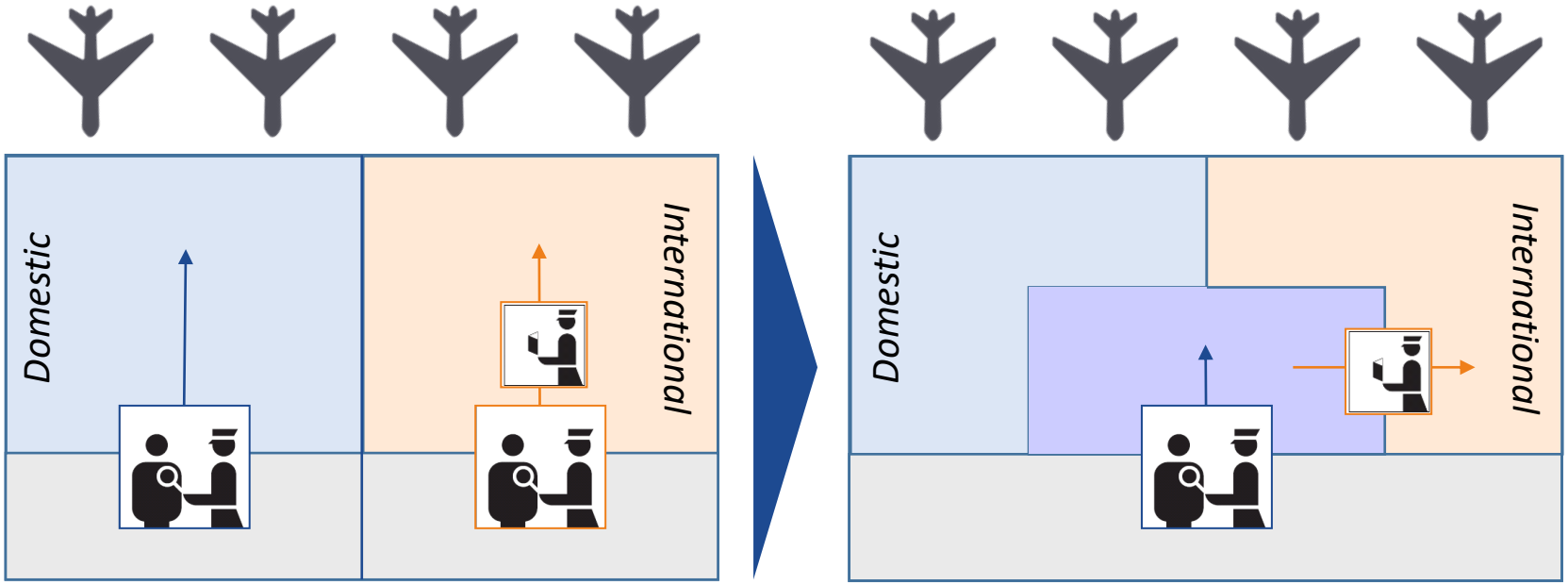
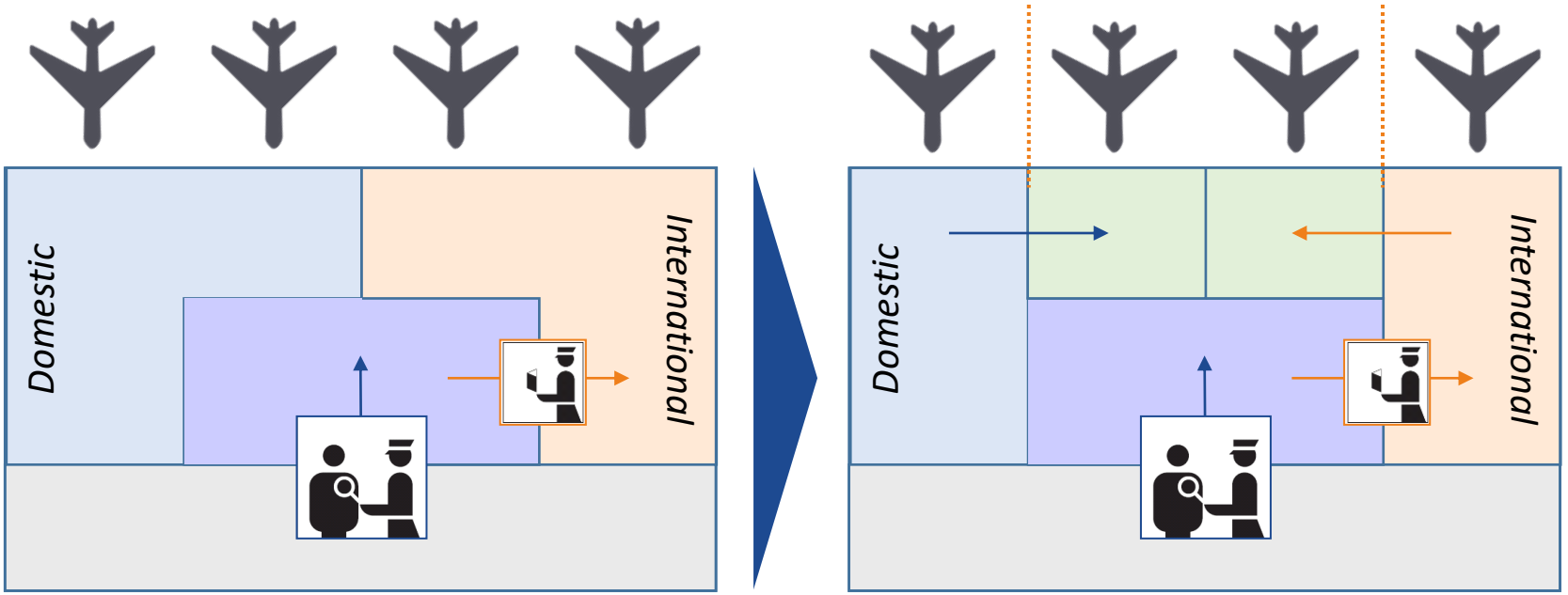


Centralizing terminal infrastructure enhances

- Peak capacities (e.g. of checkpoints)
- Resource utilization (e.g. of security lanes, staff)
- Space efficiency (e.g. checkpoints, F&B)

Flexible Usage of Infrastructure



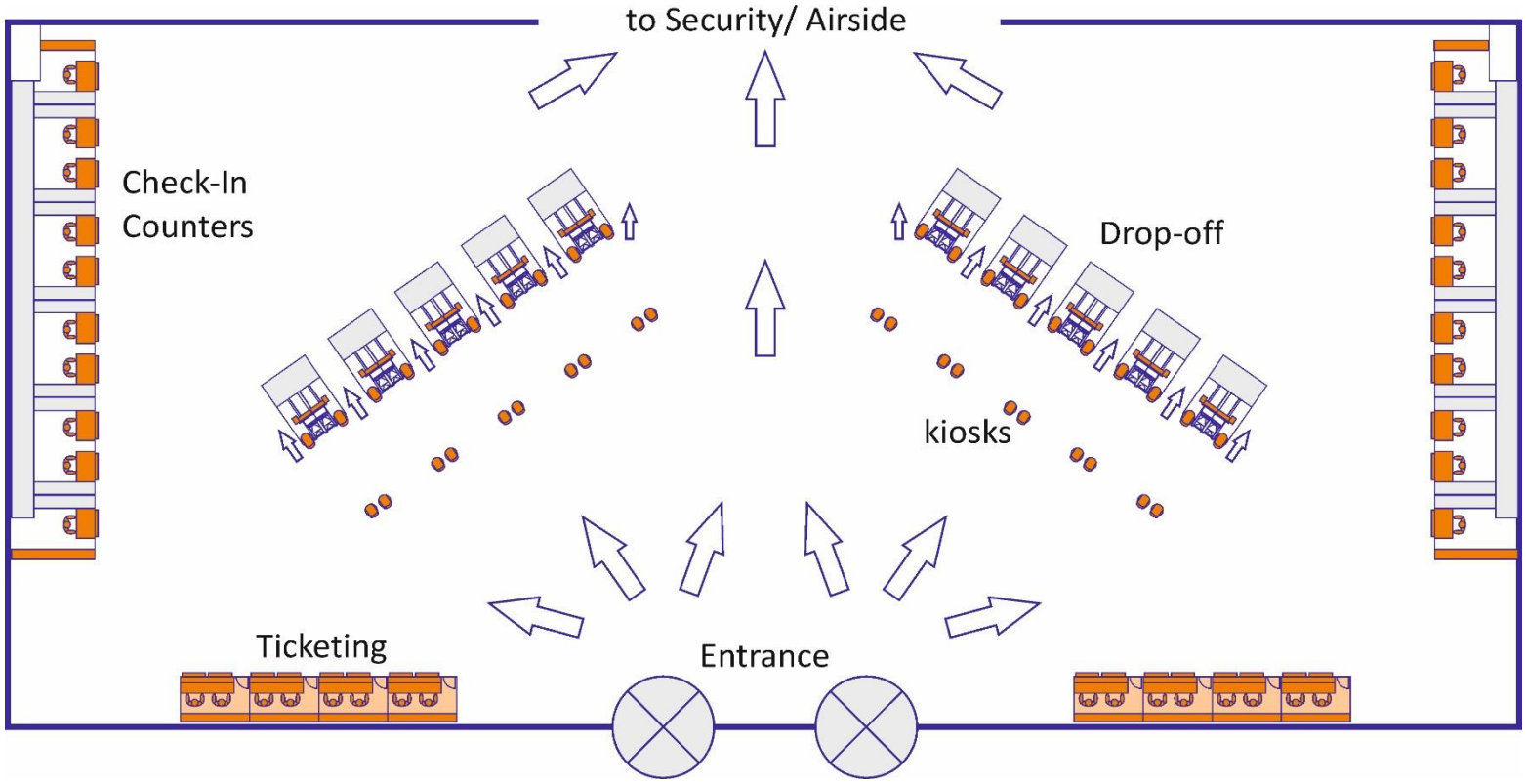
Flexible design and usage of terminal infrastructure enhances

- 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

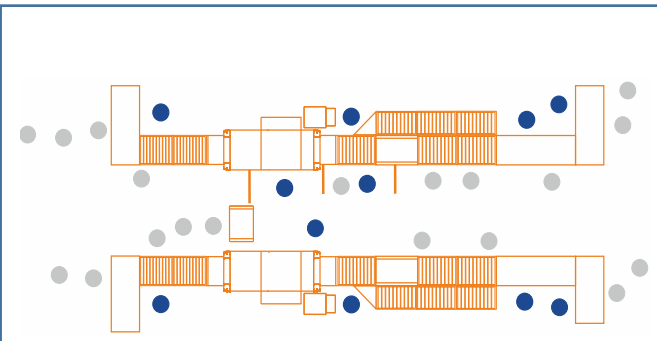
Layout Optimization of Check-In Areas

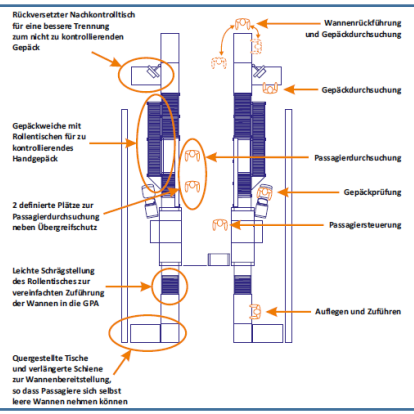


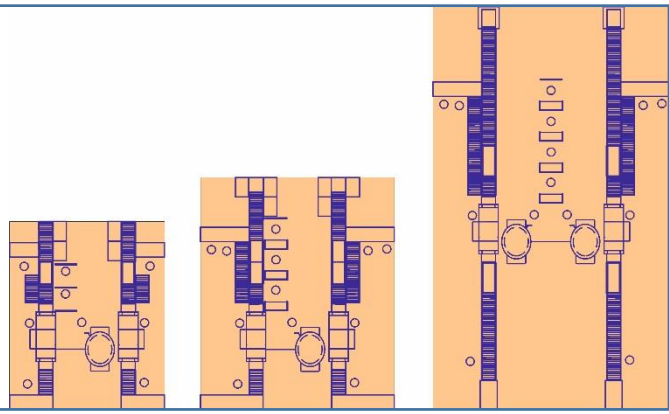
- **e.g. 50% common-use automated bag-drop** (bag-tag at kiosk); **50% staffed counters** for special services or priority passengers
- **Reduced size** of check-in hall with optimized passenger flow

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

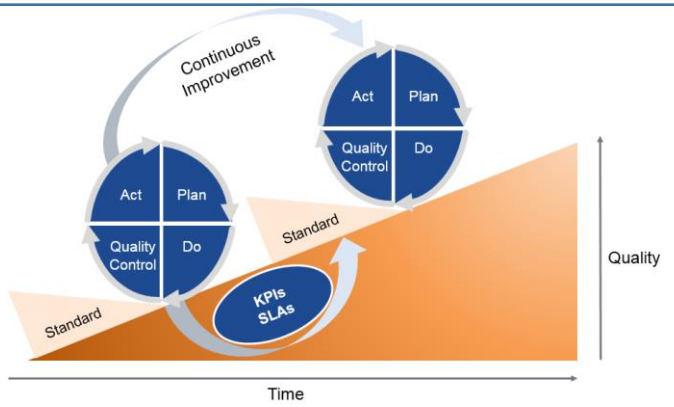
- **Automated boarder control** to enhance capacity and space utilization
- **Automated bag drop** to enhance space and resource utilization
- **Mobile agents** for check-in and printing of boarding passes
- **E-gates with boarding pass readers** for various technologies (NFC, QR-Code, RFID, biometrics)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



KPI	Number of total arrival baggage
Detailed description of KPI:	This is the total number of inbound baggage within one month. This is not a KPI that can be achieved, nor is it measured against performance; nor are any penalties connected to it. This KPI is however of high importance since it puts all other performance indicators into perspective when compared versus the total baggage numbers shipped in the same period.
Relevant Area:	RUH KKIA Terminals 1, 2 and 3
Measurement:	Number of arrival bags within one month split into ▪ In-gauge baggage (in system bags) ▪ SOOG baggage (manually via SOOG lifts)
Target:	No target set
Tolerance:	Not applicable
Method of Measurement:	Count of bags as per SAC, SCADA or manual count from operations personnel.
Frequency of Measurement:	Reported in daily shift reports. Summarised in monthly reports.
Size of sample:	100%.
Exceptions for the result evaluation:	None
Responsibility for ascertainment of the required data:	Ground Handler Service Manager KKIA Head of Baggage Handling Services KKIA BH Analyst
Format and frequency of report with results:	Monthly per dashboard report including data sheets in excel format and graphics.
Reporting Process Responsibilities:	Total bag numbers to be reported per shift and per 24 hours in the shift reports. To be compiled in monthly figures and annual figures for annual month-to-month comparison by the BH Analyst.
On-going quality assurance:	Not applicable
Consequences and action in case of KPI targets not being achieved:	None
Other relevant issues:	none

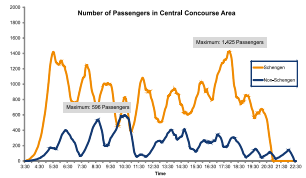
assurance:	
Consequences and action in case of KPI targets not being achieved:	Damages of OMR 15000 (Saudi Arabian Rial Fifteen Thousand) will be applied per incident if the response time for response maintenance and remedial service to the BHS electro-mechanical facility (except servers and software) is greater than five minutes.
Other relevant issues:	none

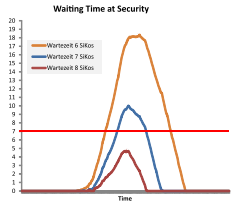
Enhancing Airport Capacity

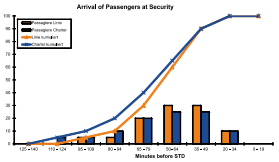
How to find the suitable Measures?

1 Capacity Assessment Detection of Bottlenecks

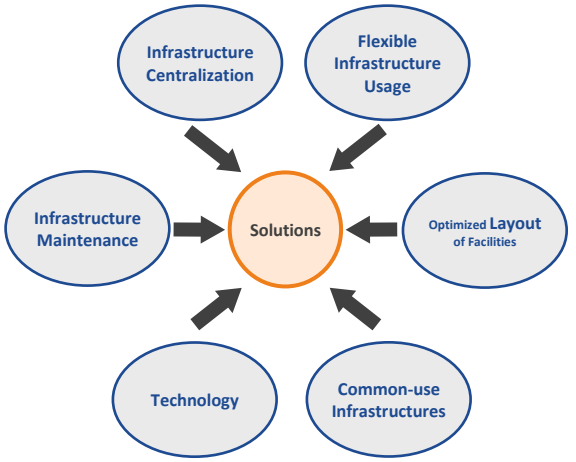
2 Determination of Capacity Requirements, Target State







3 Development and evaluation of Solutions



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Thank you very much for your attention!

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