UNIT 22.
Airport Operations Management

Colbourne College

AIM & OBJECTIVES OF LESSONS 7, 8 & 9

LO3 Evaluate how the advances in technology have affected airport processes, systems and people

- **P4** Assess the significant impact of technology on airport processes, systems and people. Use specific examples to support your findings of how airports have engaged with and implemented technology

- **M3** Critically evaluate the advantages and disadvantages of technological impacts on the airport environment

- **D2** Formulate valid conclusions and judgements about the impacts of technology on the airport environment

TECHNOLOGY; WHAT IS

TECHNOLOGY IS A BODY OF KNOWLEDGE DEVOTED TO CREATING TOOLS, PROCESSING ACTIONS AND THE EXTRACTING OF MATERIALS. THE TERM 'TECHNOLOGY" IS WIDE, AND EVERYONE HAS THEIR WAY OF UNDERSTANDING ITS MEANING.

WE USE TECHNOLOGY TO ACCOMPLISH VARIOUS TASKS IN OUR DAILY LIVES, IN BRIEF; WE CAN DESCRIBE TECHNOLOGY AS PRODUCTS AND PROCESSES USED TO SIMPLIFY OUR DAILY LIVES.

(RAMEY, 2013)

TECHNOLOGY; WHAT IS

WE USE TECHNOLOGY TO EXTEND OUR ABILITIES, MAKING PEOPLE THE MOST CRUCIAL PART OF ANY TECHNOLOGICAL SYSTEM.

TECHNOLOGY IS ALSO AN APPLICATION OF SCIENCE USED TO SOLVE PROBLEMS. BUT IT IS VITAL TO KNOW THAT TECHNOLOGY AND SCIENCE ARE DIFFERENT SUBJECTS WHICH WORK HAND-IN-HAND TO ACCOMPLISH SPECIFIC TASKS OR SOLVE PROBLEMS.

(RAMEY, 2013)

TECHNOLOGY AND THE CUSTOMER EXPERIENCE

RAPID ADOPTION BY AIR TRAVELLERS OF WEB-ENABLED SMARTPHONES AND TABLET COMPUTERS, COUPLED WITH EXPLOSIVE GROWTH IN SOCIAL MEDIA, IS FORCING AIRLINES TO CHANGE THE WAY THEY INTERACT WITH CUSTOMERS - AND IN THE PROCESS IS PROPELLING IMPROVEMENTS IN THE PASSENGER EXPERIENCE.
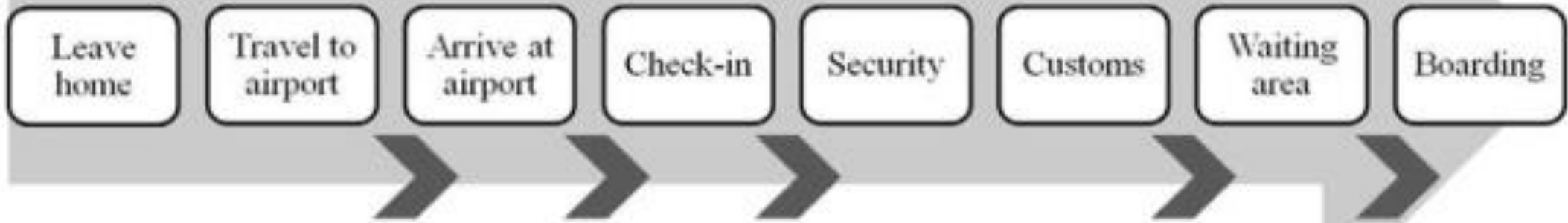
(KIRBY, 2011)

TECHNOLOGY AND THE CUSTOMER EXPERIENCE

AIRLINES HAVE SO MANY TOUCH POINTS WITH PASSENGERS IN THE PASSENGER JOURNEY. IT'S A MUCH BIGGER RELATIONSHIP NOW THAN IN THE PAST. IT'S NOT JUST ABOUT FREQUENT-FLYER MILES BUT THE BOOKING EXPERIENCE, THE CHECK-IN EXPERIENCE AND THE THINGS YOU CAN DO AT THE AIRPORT, LIKE ACCESS LOUNGES.
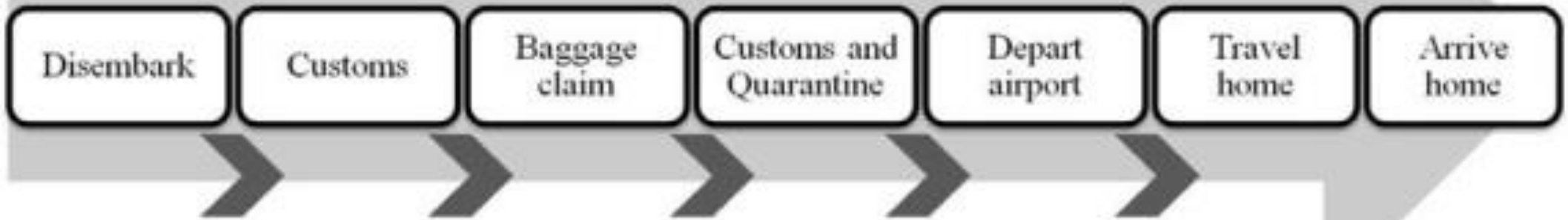
THAT RELATIONSHIP YOU CARRY IN-FLIGHT AND THROUGH THE POST-FLIGHT JOURNEY.

(KIRBY, 2011)

Departures

Leave home → Travel to airport → Arrive at airport → Check-in → Security → Customs → Waiting area → Boarding

Arrivals

Disembark → Customs → Baggage claim → Customs and Quarantine → Depart airport → Travel home → Arrive home

▶ Discretionary activities

Entering an airport	• information
Check-in	• process • airline service • personnel • technology (equipment and devices) • check-in luggage • carry-on luggage
Security	• process • security screening • security service • personnel • technology (equipment and devices) • hand search
Customs	• process • personnel • custom service • technology (equipment)
Departure Hall	• not well understood; various levels of interactions associated with discretionary departure activities
Boarding an aircraft	• process • airline service • technology (equipment) • personnel

Table 2 Passengers' Levels of Interaction at Arrival

Interaction points (domain interfaces)	Interaction level
Exit aircraft	- process - airline service - technology (equipment) - personnel - information
Duty free shopping	discretionary arrival activity between two process related interaction points
Custom	- process - personnel - custom service - technology (equipment)
Luggage collection	- process - personnel - custom service - technology (equipment) - luggage - quarantine dogs - airport service personnel (lost luggage)
Custom and quarantine	- process - custom personnel - custom service - technology (equipment) - luggage - quarantine personnel - quarantine service - airport service personnel (lost luggage)
Arrival hall	not well understood; various levels of interactions associated with discretionary arrival activities
Departing airport	- information - airport services - personnel - technology (equipement)

TECHNOLOGY AND THE CUSTOMER EXPERIENCE

TO IMPROVE THE PASSENGER EXPERIENCE, TECHNOLOGY OPTIONS SHOULD FOCUS ON WHAT THE PASSENGER WANTS. THE 2019 IATA GLOBAL PASSENGER SURVEY NOTED STRONG PREFERENCES BY TRAVELERS FOR TECHNOLOGY TO ENABLE THEM TO TRACK THEIR BAGGAGE IN REAL TIME AND TO EXPEDITE THEIR JOURNEY THROUGH THE VARIOUS AIRPORT PROCESSES.

(WARSAW, 2019)

TECHNOLOGY AND THE CUSTOMER EXPERIENCE

INTERNATIONAL AIR TRANSPORT ASSOCIATION (IATA)- ESTABLISHES GLOBAL GUIDELINES FOR THE AIRLINE INDUSTRY KIOSK – ANY OF A NUMBER OF FREESTANDING ELECTRONIC DEVICES OR WORKSTATIONS DESIGNED TO FACILITATE VARIOUS RELATED ACTIVITIES SUCH AS ISSUING BOARDING PASSES AT AN AIRPORT OR CHECKING IN OR OUT OF A HOTEL SELF SERVICE TECHNOLOGY (SST)- TECHNOLOGICAL INTERFACES ALLOWING CUSTOMERS TO PRODUCE SERVICES INDEPENDENT OF INVOLVEMENT OF DIRECT SERVICE EMPLOYEE

(MEUTER ET AL., 2000)

TECHNOLOGY AND THE CUSTOMER EXPERIENCE

GLOBAL DISTRIBUTION SYSTEM (GDS)- WORLDWIDE COMPUTERIZED RESERVATION NETWORK USED AS A SINGLE POINT OF ACCESS FOR RESERVING AIRLINE SEATS, HOTEL ROOMS, RENTAL CARS, AND OTHER TRAVEL RELATED ITEMS BY TRAVEL AGENTS, ONLINE RESERVATION SITES, AND LARGE CORPORATIONS.

THE PREMIER GDS ARE AMADEUS, GALILEO, SABRE, AND WORLD SPAN OWNED AND OPERATED AS JOINT VENTURES BY MAJOR AIRLINES, CAR RENTAL FIRMS, AND HOTEL GROUPS. ALSO CALLED AUTOMATED RESERVATION SYSTEM (ARS) OR COMPUTERIZED RESERVATION SYSTEM (CRS).

(TECHNOSOFT, 2017)

TECHNOLOGY AND THE CUSTOMER EXPERIENCE

TO IMPROVE THE PASSENGER EXPERIENCE, TECHNOLOGY OPTIONS SHOULD FOCUS ON WHAT THE PASSENGER WANTS. THE 2019 IATA GLOBAL PASSENGER SURVEY NOTED STRONG PREFERENCES BY TRAVELERS FOR TECHNOLOGY TO ENABLE THEM TO TRACK THEIR BAGGAGE IN REAL TIME AND TO EXPEDITE THEIR JOURNEY THROUGH THE VARIOUS AIRPORT PROCESSES.

(WARSAW, 2019)

SOCIAL MEDIA & PUBLIC RELATIONS MANAGEMENT

INTERNATIONAL AIR TRANSPORT ASSOCIATION'S (IATA) BEST PRACTICE GUIDE FOR CRISIS COMMUNICATIONS DEPICTS THREE DRIVERS BEHIND THE EVOLUTION OF SOCIAL MEDIA.

- CONNECTIVITY

- MOBILITY

- STREAMING VIDEO

(IATA, 2019)

SOCIAL MEDIA & PUBLIC RELATIONS MANAGEMENT

IATA DESCRIBES TWITTER AS THE "MOST WIDELY-USED 'MICRO-BLOGGING' SERVICE" AND NOTES THAT IT IS AVAILABLE IN 30 LANGUAGES, INCLUDING CHINESE, KOREAN, ARABIC. IT ALSO REPORTS THAT A TWEET FROM A "SURVIVOR OR EYEWITNESS CAN REACH TENS OF THOUSANDS OF USERS AROUND THE WORLD IN MINUTES, INCLUDING MAINSTREAM JOURNALISTS WHO MONITOR TWITTER"

(IATA, 2019)

SOCIAL MEDIA & PUBLIC RELATIONS MANAGEMENT

AVIATION ACCIDENTS AND SERIOUS INCIDENTS ARE MERCIFULLY RARE, WITH ACCIDENT RATES CONTINUING TO FALL DESPITE THE CONTINUOUS GROWTH IN THE NUMBER OF PEOPLE FLYING EACH YEAR.

SEVERAL AIRLINES HAVE ADAPTED TO THE "ALWAYS ON" ENVIRONMENT BY REMODELLING THEIR CRISIS COMMUNICATION STRATEGY AROUND TWO KEY ELEMENTS:

1. 24/7 SOCIAL LISTENING

2. A IPHYSICAL CONNECTION BETWEEN THE OPERATIONS AND COMMUNICATIONS DEPARTMENTS
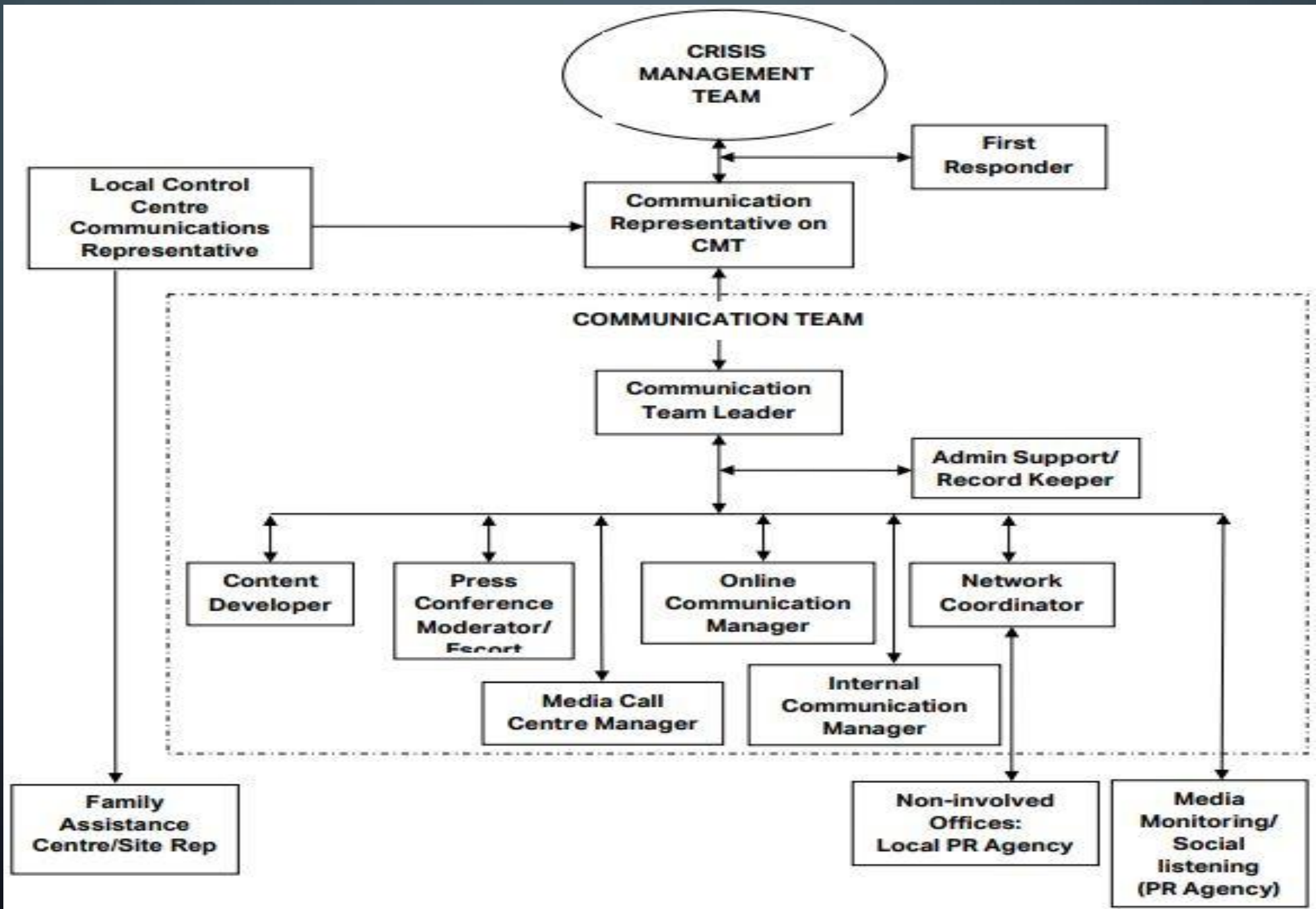
(IATA, 2019)

SOCIAL MEDIA & PUBLIC RELATIONS MANAGEMENT

USING PLATFORMS LIKE TWITTER, FACEBOOK AND LINKEDIN, YOU'RE CUTTING OUT THE THIRD PARTY AND OFFERING YOUR MESSAGES DIRECTLY. IT IS A MUCH QUICKER, MORE DIRECT ROUTE OF COMMUNICATION TO A VERY TARGETED AUDIENCE WHO HAVE CHOSEN TO ENGAGE WITH YOUR BRAND ON SOCIAL MEDIA.

(IATA, 2019)

SOCIAL MEDIA & PUBLIC RELATIONS MANAGEMENT

AIRPORT AND AIRLINE SAFETY MANAGERS ARE WELL AWARE OF THE FINE LINE THAT MAY EXIST BETWEEN HAVING AN INCIDENT AND HAVING A MAJOR ACCIDENT. THEY ARE ALSO USUALLY AWARE OF THE ADVANTAGES OF HAVING WELL PREPARED EMERGENCY PROCEDURES TO MINIMISE THE EFFECTS, BOTH SOCIAL AND FINANCIAL, OF AN ACCIDENT SHOULD ONE EVER OCCUR.

(TAYLOR, 2019)

SOCIAL MEDIA & PUBLIC RELATIONS MANAGEMENT

WITH PR, THE MEDIA'S REPRESENTATION OF A STORY CAN SIGNIFICANTLY IMPACT ON PUBLIC OPINION ABOUT AN ORGANISATION, PRODUCT OR EVEN A PERSON. EDITORIAL HAS A CREDIBILITY FACTOR AS IT IS ENDORSED BY THE JOURNALIST OR THIRD PARTY. HOWEVER, THERE IS ALWAYS THE RISK THAT YOU CAN'T CONTROL WHAT THE JOURNALIST WRITES SO THEN YOU CONSIDER GOING STRAIGHT TO THE SOURCE – VIA SOCIAL MEDIA.

(CPCOMMUNICATIONS, 2018)

TECHNOLOGY AND HR

TRAVELERS WANT TO GET TO THEIR DESTINATION AS FAST AS POSSIBLE – AND AIRPORTS, AIRLINES AND TECH PROVIDERS ARE INVESTING HEAVILY IN AUTOMATION TO MAKE THAT HAPPEN. BUT DESPITE THE INVESTMENTS, THERE'S STILL A LOT OF WAITING AROUND: 50% OF TRAVELERS REPORT SPENDING AT LEAST 45 MINUTES WAITING IN LINE WHILE AT THE AIRPORT, WITH 21% SAYING THEY SPEND AT LEAST AN HOUR IN LINE, ON AVERAGE..

(SEIDEL, 201)
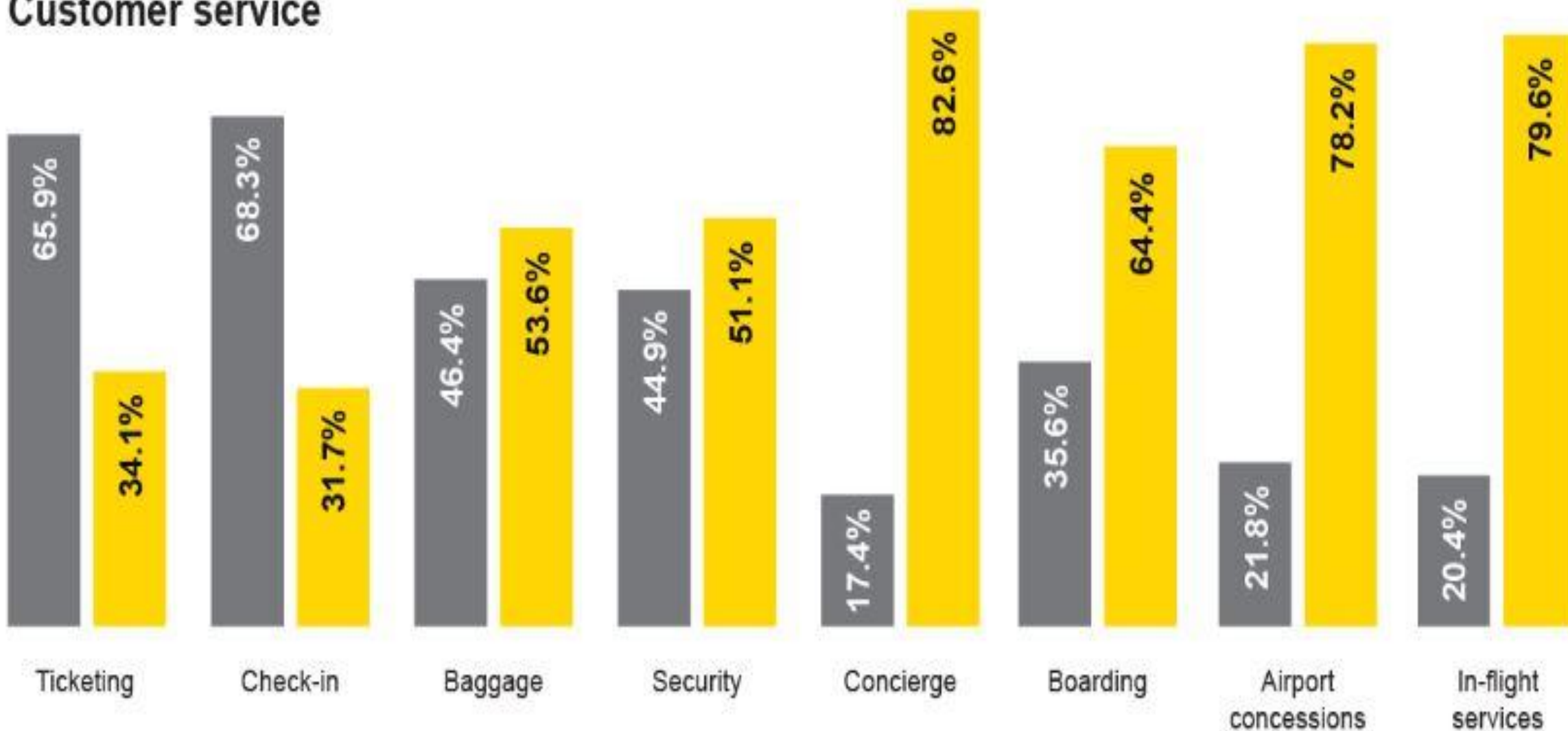
TECHNOLOGY AND HR

BEYOND PURE AUTOMATION, MANY AIRPORTS ARE TESTING NEW SECURITY INNOVATIONS TO STREAMLINE LINES AND IMPROVE SECURITY. RECENT EXAMPLES INCLUDE ADELAIDE AIRPORT, WHICH IS TESTING NEW 3D X-RAY SCANNERS THAT SCREEN CARRY-ON BAGS WITHOUT MAKING TRAVELERS REMOVE ELECTRONIC DEVICES.

(OAG, 2017)

TECHNOLOGY AND HR

EVIDENCE SUGGESTS THAT THERE ARE ENORMOUS FINANCIAL INCENTIVES FOR EMPLOYERS TO INCREASINGLY AUTOMATE THEIR (CURRENTLY HUMAN) PROCESSES (MARKOFF, 2011) AND THAT ADVANCES IN AUTOMATION COULD DRAMATICALLY CHANGE THE NATURE OF JOBS AVAILABLE (PWC, 2017).

REALISTICALLY, WHETHER A TASK CAN BE AUTOMATED DEPENDS ON THE ABILITY OF CODERS TO WRITE A SET OF PROCEDURES THAT WILL IMPROVE THE PROBLEM SPECIFICATION AND ACCOUNT FOR EVERY POSSIBLE CONTINGENCY (FREY & OSBOURNE, 2017).

(PARRY AND BATTISTA, 2019)

TECHNOLOGY AND HR

THE PRINCIPAL HR FUNCTIONS OF ATTRACTING, SELECTING, DEVELOPING, MOTIVATING AND RETAINING TALENTED EMPLOYEES IN ORGANISATIONS (STONE ET AL., 2015) REMAIN IMPORTANT, BUT POTENTIALLY REQUIRE DIFFERENT APPROACHES IN THE FUTURE WORLD OF WORK (HOLLAND & BARDOEL, 2016).
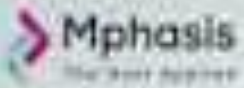
(PARRY AND BATTISTA, 2019)

TECHNOLOGY AND HR

IN GENERAL, TECHNOLOGY CAN PROVIDE NEW OPPORTUNITIES FOR HR. WE HAVE ALREADY SEEN THAT TECHNOLOGY OFTEN INCREASES EFFICIENCY IN DELIVERING SERVICES, DECREASES THE ADMINISTRATIVE-RELATED WORK, AND ALLOWS HR TO CONTRIBUTE TO THE STRATEGIC DIRECTION OF ORGANISATIONS.

(OAG, 2017)

TECHNOLOGY AND HR

MAJOR IMPACTS ON HR PRACTICES:

- SECURITY PRACTICES

- DATA OVERFLOW

- EASE OF COMMUNICATION

- DATA ANALYSIS OF EMPLOYEE PERFORMANCE

- RECRUITMENT PROCESS

(SEIDEL, 2019)

TECHNOLOGY AND AIRPORT DESIGN

WHILE WE ALL KNOW THAT NEW TECHNOLOGY WILL HAVE A HUGE IMPACT ON THE FUTURE AIRPORT EXPERIENCE, IT'S FAR MORE DIFFICULT TO PREDICT EXACTLY HOW THESE TECHNOLOGICAL DEVELOPMENTS WILL IMPACT THE ACTUAL APPEARANCE OF FUTURE TERMINALS.

THE KEY FEATURES OF MANY FUTURISTIC TERMINALS ARE THE VAST DIGITAL SCREENS THAT PASSENGERS CAN INTERACT WITH VIA THEIR OWN MOBILE DEVICE AND AN 80-METRE-HIGH DIGITAL CLOCK TOWER.

(FUTURE TRAVEL EXPERIENCE, 2013)

TECHNOLOGY AND AIRPORT DESIGN

THE CHANGING NATURE OF THE ACTUAL MATERIALS USED TO CONSTRUCT FUTURE FACILITIES IS ANOTHER OF THE FOCAL POINTS THAT COULD POTENTIALLY HAVE A SIGNIFICANT IMPACT ON THE APPEARANCE OF TOMORROW'S AIRPORT.

MATERIALS THAT REPAIR THEMSELVES WHEN DAMAGED AND SURFACES THAT CLEAN THEMSELVES ARE AMONG THE MORE SEEMINGLY OUTLANDISH INNOVATIONS THAT COULD, IN FACT, BECOME A REALITY IN THE NOT-TOO-DISTANT FUTURE..

(FUTURE TRAVEL EXPERIENCE, 2013)

TECHNOLOGY AND AIRPORT DESIGN

THE MAIN DRIVING FACTOR FROM WITHIN THE INDUSTRY TO ENHANCE THE LEVEL OF SERVICE ON OFFER, THOUGH, IS THE RECENT CHANGE IN MINDSET.

AIRLINES NOW TALK ABOUT 'CUSTOMERS' AND THAT IN ITSELF IS A DIFFERENT ATTITUDE TO WHAT WE'VE SEEN IN THE PAST.

THERE IS ALSO COMPETITION BETWEEN CITIES, COMPETITION BETWEEN AIRPORTS AND COMPETITION BETWEEN AIRLINES, WHO ALL WANT PASSENGERS' TIME. ALL THE AIRPORTS ARE NOW TRYING TO PROVE THEMSELVES TO THE PASSENGER.

(FUTURE TRAVEL EXPERIENCE, 2013)
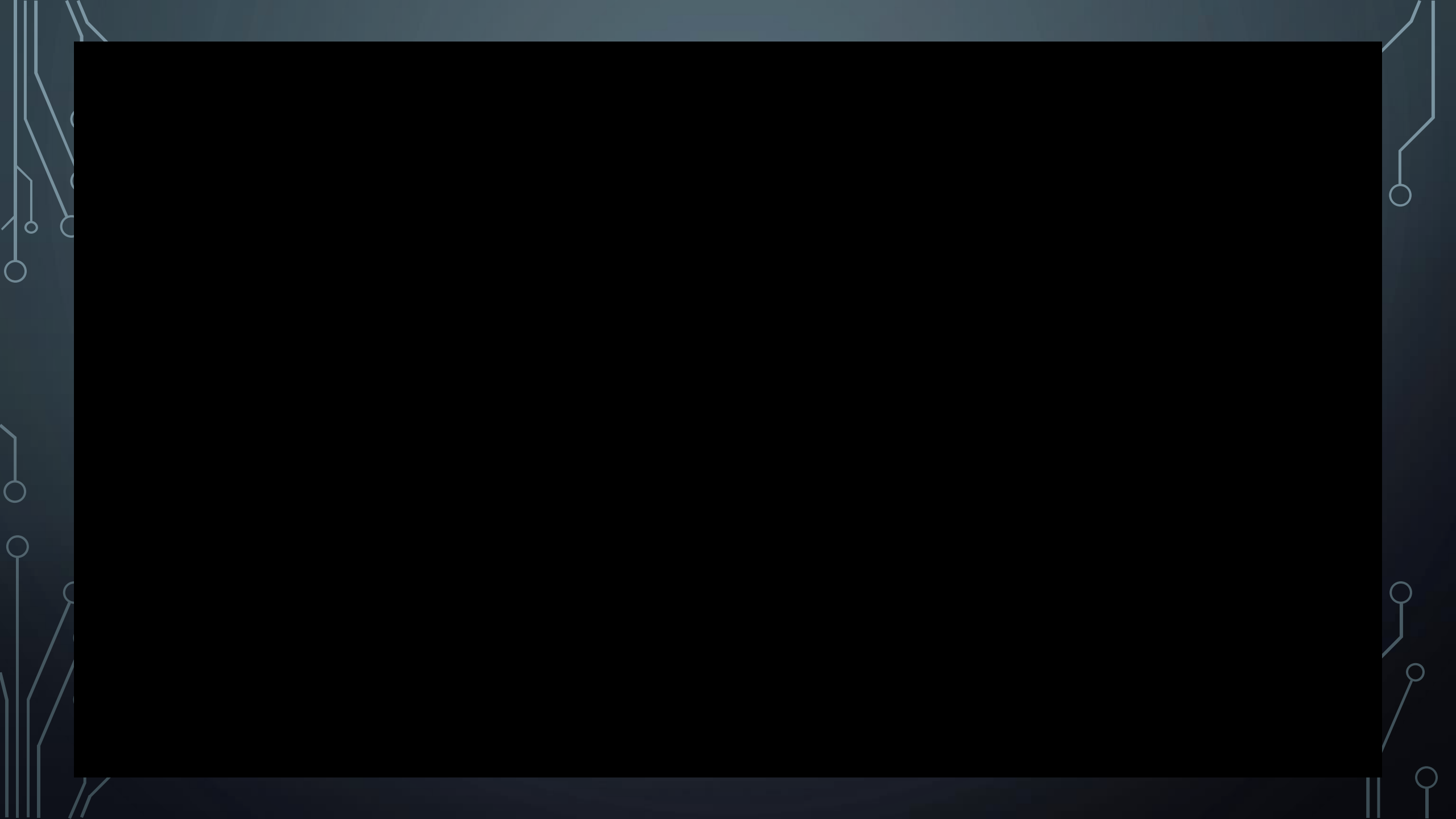
INDUSTRY HIGHLIGHTS

- TECHNOLOGY HAS ALLOWED FOR THE PASSENGER CHECK-IN PROCESS TO EVOLVE — PUTTING KIOSKS PROMINENTLY IN TICKETING LOBBIES.

- PASSENGER CONVEYANCE SYSTEMS LIKE MOVING WALKWAYS AND TRAINS HAVE ALLOWED FOR ELONGATED AND EXPANDED TERMINAL CONFIGURATIONS.

- IMPROVEMENTS IN RADAR AND ATC TECHNOLOGY HAVE AFFORDED TIGHTER SPACING OF AIRCRAFT. THIS HAS BEEN A BOON FOR AIRFIELD CAPACITY AND HAS AFFORDED OPERATIONAL BANKS THAT, IN TURN, PUT STRAINS ON TERMINAL OPERATIONS.

(BEAMON, 2016)

PREDICTING THE TECHNOLOGICAL FUTURE

- WILL MOBILE PHONE TECHNOLOGY CONTINUE TO TRANSFORM AIRPORT CONCESSIONS AND, THUS, IMPACT OUR TERMINAL DESIGNS?

- WILL ROBOTS BE HANDLING CHECKPOINT SECURITY? OR BAGGAGE HANDLING?

- WILL TECHNOLOGY CHANGE THE BAGGAGE PROCESSING EXPERIENCE, ALLOWING PASSENGERS TO CONFIDENTLY SEPARATE FROM THEIR BAGS?

- WILL MOBILITY TECHNOLOGY IMPROVE THE ABILITY OF THOSE WITH PHYSICAL IMPAIRMENTS TO USE THE AIR TRANSPORTATION SYSTEM?.

(BEAMON, 2016)

PREPARING FOR A TECHNOLOGICAL FUTURE

- BE MINDFUL OF ADJACENCIES AND ENCROACHING DEVELOPMENT IN CASE ADDITIONAL SPACE IS REQUIRED.

- DESIGN WITH FLEXIBILITY AND ADAPTIVE RE-USE IN MIND.

- BE CONSCIOUS OF SUSTAINABILITY AND LIFE-CYCLE COSTS WHEN DEVELOPING INFRASTRUCTURE PLANS.

- ENSURE BUDGETS ADEQUATELY FUND BOTH TECHNOLOGY INVESTMENTS, AS WELL AS PLANNING EFFORTS.

(BEAMON, 2016)

PREPARING FOR A TECHNOLOGICAL FUTURE

WHILE LONG-TERM PLANNING CERTAINLY HAS AN IMPORTANT ROLE IN OUR INDUSTRY, MOST ORGANIZATIONS COULD BENEFIT FROM ADDITIONAL PLANNING ENDEAVORS. AN IDEA THAT IS TAKING HOLD IN THE TRANSPORTATION INDUSTRY IS THE PROCESS OF SCENARIO PLANNING

(BEAMON, 2016)

ADDITIONAL RESOURCES

- HTTPS://DIGITALSCHOLARSHIP.UNLV.EDU/CGI/VIEWCONTENT.CGI?ARTICLE=2054&CONTEXT=THESESDISSERTATIONS

- FILE:///C:/USERS/CHRIS-ANN%20HUNTER/DOWNLOADS/AIRPORT_PASSENGER_EXPERIENCE_MODELS.PDF

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