AGENDA

- Swiss International Air Lines
- ELB introduction
- Further initiatives & outlook
SWISS is a successful hub-carrier that connects Switzerland to the world.

**CHF 5bn Investments**
- are planned in the next years

**94 Aircraft**
- 30 Long-Haul Aircraft
- 52 Short-Haul Aircraft
- 12 Wet-Lease Aircraft

**>16 Mio Passengers**
- are transported by SWISS every year

**103 Destinations**
- In 46 countries
- 76 European Destinations
- 26 Intercontinental Destinations

**CHF 453m EBIT**
- in 2015

**8’564 Employees**
- 1’371 Pilots
- 3’835 Cabin Crew
- 3’358 Ground Staff

Founded in 2002
Joined LH Group in 2005
SWISS invests in new, more comfortable aircraft; currently in the middle of a fleet roll over

### 2015

**Long-haul**
- **A340-300**
  - 219 seats
  - Rollover A340 #1-6
- **A330-300**
  - 236 seats
  - Rollover A340 #7-10

**Short-haul**
- **A321**
  - 219 seats
  - Rollover A320/A321
- **A320**
  - 180 seats
  - Rollover A320/A321 (options)
- **A319**
  - 138 seats
  - Rollover A320 (4 aircraft)
- **Avro RJ100**
  - 97 seats
  - Rollover Avro (full fleet)

### 2025

**Long-haul**
- **B777-300ER**
  - 340 seats
- **A340-300**
  - 219 seats
- **A330-300**
  - 236 seats
- **A321neo**
  - 221 seats
- **A320neo**
  - 180 seats
- **CS100/300**
  - 125-145 seats

**Short-haul**
- **Rollover A320/A321 (4 aircraft)**
- **Rollover A319 (full fleet)**
- **Rollover Avro (full fleet)**

* Currently operated (2016)
SWISS’ network of more than 100 destination around the world is based on market demand in Switzerland.
SWISS Technical Division with clear strategic target & setup regarding in-house vs. outsourced services

**Services in-house**

- Planning
- Engineering
- Line Maintenance*
- Logistics Services
- Quality & Safety

**Services outsourced**

- Engine Maintenance**
- Base Maintenance
- Component Services

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* Airbus A-Checks still outsourced; project to do it in-house by April 2017
** Except AVRO engines which are maintained in-house in Basel

Operational independence from single supplier
Full control and responsibility for dispatch reliability
Cost transparency and market power
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Electronic Log Book: Introduction at SWISS with different user modes and on surface tablets

Two devices: Master device in cockpit and 2nd device in cabin for cabin complaints; connectivity by GSM modem (loose equipment)

- One solution for cockpit and cabin (all operated aircraft types)
- One solution for short and long distance flights
- Quality improvements
- Cost reduction

ELB Architecture and Data security
WIFI – GSM – VPN

ELB Users
- Cockpit
- Cabin

Airborne Connectivity
- Router
  - WIFI
  - Cellular
  - Authorisation: Hidden SSID WPA2/PSK

CrossConsense
- ELB Server
  - VPN

SWISS
- AMOS Server
- VPN

Swisscom Private APN
- RADIUS

Avg. Sync time 20s
Currently rolled out on long-haul fleet and CSeries; short-haul fleet to follow with winter timetable

ELB rolled out on fleet of 32 long-haul aircraft:

**Boeing** B777 fleet of 6 aircraft, all in service
Rollout started with 1st delivery HB-JNA on 19th January 2016

**Airbus** A330 and A340 fleet of 32 aircraft
Rollout started on 1st June 2016 and was completed by mid of July 2016

**Bombardier** CSeries100 and 300 fleet currently consisting of 3 aircraft
Rollout started with 1st delivery HB-JBA on 30th June 2016

To be rolled out on 51 short-haul aircraft:

**Airbus** A32Family fleet includes 36 aircraft
Rollout starts on 15th of November 2016

**AVRO** RJ1 fleet including 15 aircraft
Rollout to start on 29th of November 2016
First 10’000+ reports handled through ELB and on track to reach break even after roughly 2 years

Projected net financial impact of project

- **Elimination** of manual handling of 70’000+ reports per year
- **Reduction** of central booking staff (data typist)
- **Elimination** of mistakes (handwriting not readable, typing errors) = Quality item
- **Efficient** reporting = Increasing efficiency (no manual transfer into MRO system)

Nr. of reports driven by cabin for long-haul aircraft:
- Cabin 74%
- Cockpit 14%
- Maintenance 12%

Short-haul:
- Cabin 23%
- Cockpit 59%
- Maintenance 18%
Staggered introduction helpful to gain experience; main issues are battery power and connectivity

- Rollout was delayed several times and finally started out with introduction B777 (no physical logbook ordered)

- Generally well accepted, especially by Maintenance

**Main issues first few months**

- **Battery power**
  - Automatically Sleep mode function – keep the time short
  - Instruct ELB user to switch the device into sleep mode after using it
  - Connect the devices always to the power outlet for charging

- **Connectivity certain stations (North America, BKK)**
  - On stations, with low bandwidth or no network coverage, maintenance assists the cockpit crew in using the backup process
  - Change of roaming partner requested

- **Processes / software**
  - Long sync time -> Only delta synchronized
  - Fuel uplift can also be entered after take off
Next steps include roll out on all short haul aircraft, further bug fixing and integrated solution CSeries

Until end of this year further steps include:

- Complete roll out to all SWISS aircraft -> eliminate physical log books in whole fleet
- Introduction at Edelweiss (one aircraft, rest in 2017)
- Further improvements (list with known bugs)
- In SmartDispaly integrated solution CSeries

A release 2 version expected to be available during 2017
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SWISS concentrates on Continuous Improvement and new technology to reduce internal/overhead cost
Thank you