Momberger VIEW Points is series of interviews, commentary and articles that extend and complement the format of our regular news coverage. We invite our readers to submit their commentary or articles on airport industry subjects close to their heart. Momberger VIEW Points will appear on an occasional basis.

How the improved Level of Service (LoS) framework can help airports improve customer service & competitiveness

An Interview with Jürgen Renner, Senior Manager in IATA’s Airport Consulting team and Global Lead of IATA’s Level of Service Initiative

Interview by Martin Lamprecht, Momberger Airport Information

Momberger Airport Information: Please give us some background about the previous Level of Service (LoS) and why it needed a major update.

Jürgen Renner: The previous IATA LoS concept and categorization has been in existence for many decades, ranging from an excellent LoS "A" (no delays and excessive space) to an unacceptable LoS "F" where the whole system breaks down due to both unacceptable delays and comfort levels. IATA always recommended LoS “C”, which typically denotes a good comfort level and acceptable delays while keeping costs at reasonable levels.

Over the last several years we had observed that some decision-makers have chosen LoS "A" or "B" to be used when it comes to designing new terminal facilities or operating existing ones. In our view, choosing LoS categories above "C" is somehow a “misguided approach” – resulting in over-designed and very cost-ineffective terminal buildings. For example, LoS “A” requires between 30-50% more space per occupant, significantly increasing the overall building size – which needs to be not only built but also heated, cooled and cleaned, causing significant CAPEX and OPEX. In addition, LoS “A” means ZERO delays at the various passenger touchpoints – resulting in the need of providing a huge number of facilities to have no waiting times, even during traffic peaks!

So, in the above context, we have decided to modify our LoS categorization: Instead of the letters "A" down to "F", we now have only four, but very distinct LoS categories: OPTIMUM, SUB-OPTIMUM, UNDER-PROVIDED and OVER-DESIGN.

Momberger Airport Information: How did the IATA – ACI World partnership come together on this project to enhance the previous LoS and how did the two parties complement each other in representing the needs of operators and users of airports?

Jürgen Renner: On the LoS topic IATA actually already engaged with ACI-World in the year 2013 when preparing the works for an updated version of IATA’s Airport Development Reference Manual (ADRM). The background of this collaboration relates to the fact that the interests of airlines and airports are very closely linked, i.e. the success of one group contributes to the success of the other. As such, airlines and
airports are very close business partners – so we thought that it will be of great benefit to release the new edition of the ADRM in joint collaboration with our colleagues from ACI.

A close and collaborative working relationship with ACI ensures that the ADRM meets the needs of the aviation community as a whole. Intrinsically, best practice airport planning, including the affordability of major airport developments, is beneficial for airline customers and passengers.

From ADRM customer surveys we know that the chapter about Level of Service and related terminal planning sections are consistently of top interest. Therefore, we have paid special attention to the LoS Concept when updating our manual – as mentioned before, we have even completely revised the LoS Concept and related guidelines. Like with many other ADRM sections, the proposed content has been developed through many iterations of expert reviews – within IATA (and our industry groups) and externally with ACI and other internationally recognized airport experts and industry representatives. By improving the draft LoS Concept in a step-wise approach through internal and external consultation, I think we have now come up with quite a solid, significantly improved LoS Concept.

**Momberger Airport Information:** What are the major improvements of the revised LoS and how do they benefit airports, airport tenants, airlines and airports users?

**Jürgen Renner:** I think there are in total five key improvements. The first one relates to what I had already mentioned before, the categorization terms. Instead of the 'school grading' letters "A" to "F", we have now the four very distinct categories OPTIMUM, SUB-OPTIMUM, UNDER-PROVIDED and OVER-DESIGN. With the new categories we will hopefully not see any significantly over-dimensional and cost-ineffective terminal development in the future. With the new LoS OPTIMUM target we will see that new terminal developments providing (i) sufficient space, accommodating all necessary functions in a comfortable environment, (ii) stable passenger flows with acceptable waiting times and, very importantly, (iii) a good service level to passengers while keeping investments costs, operational expenditures and airport charges at reasonable levels.

The second improvement relates to the waiting times: In comparison to the previous guidelines which were quite ambiguous about waiting times, we have now very clear guidance on what OPTIMUM waiting times are – for instance, at security control, the maximum waiting times on a typical busy day should be between 5 – 10 minutes. By the way, the maximum waiting time is only one out of the four LoS Key Performance Indicators (KPIs) – the others are space per occupant, seating and occupancy (for gate holdrooms only).

The third improvement is that we have added guidelines for terminal sub-systems that were not included in the previous framework – these are check-in self-service kiosks, self-service bag-drops and customs control.

The forth improvement is a new feature that we have invented, a LoS Assessment Matrix. So whenever evaluating a service level at a certain sub-system, the matrix is used to derive the resulting LoS, always taking into account two dimensions. For example, for terminal processing facilities such as security control, we analyze the two KPIs, waiting time and space provision, at the same time – so these two KPIs will define whether security control is at LoS OVER-DESIGN, OPTIMUM, SUB-OPTIMUM or UNDER-PROVIDED.
Last but certainly not least, by providing a range of OPTIMUM KPIs, like the 5-10 minutes waiting time at security, we offer certain flexibility that allows catering for specific local market requirements and business needs.

You see, these five improvements clearly benefit all airport stakeholders. Airport users will get a good service level with sufficient space and acceptable waiting times, whereas airports and airlines will get cost-effective terminals with efficient facilities. In addition, when passengers have to queue only for short periods, they are happy and tend to spend more in the shops and restaurants – making also the tenants happy. Not being stuck in long queues also means that passengers won’t delay flight departures, certainly hereby pleasing the airlines.

Momberger Airport Information: What tools were used in the LoS framework development? How big a role did simulation tools play?

Jürgen Renner: The actual framework was developed by airport experts, taking advantage of their great experience in terminal planning and operations. And as mentioned before, an extensive internal and external review of the draft content has been done before the improved LoS Concept has been published for the first time with the release of the 10th edition of the IATA ADRM.

At IATA we are often using simulation technology whenever one of our consulting studies requires a very detailed and accurate LoS Assessment. With a well-calibrated simulation model, we can derive all the essential LoS KPIs – space, waiting times, seating and occupancy – at all terminal sub-systems in a reliable manner, allowing us to determine the respective LoS category. With the simulation tool we can not only simulate conditions in the past, but also expected circumstances in the future – which allows us to also anticipate what LoS will prevail. The assessment of a future LoS is often done in the context of terminal development, i.e. in order to validate that a terminal (expansion) design does actually provide sufficient capacity and an OPTIMUM service level in the future – should our LoS analysis result in observing areas with sub-optimum LoS conditions, then we can elaborate improvement and design revisions – and even simulate these optimizations to prove their effectiveness. That’s pretty useful in my opinion!

Momberger Airport Information: Which elements of the new LoS will have the most impact on improved customer service?

Jürgen Renner: From IATA’s Global Passenger Survey we have learned that typically the security control and immigration process are the biggest hassles for the passengers, especially when the performance of these facilities is poor. With the revised LoS Guidelines we clearly specify that the maximum waiting times must not exceed 10 minutes for both processes. In addition, for the passenger queuing space we specify that on average a minimum of 1.0 sqm per passengers must be provided – which will ensure that a passenger will get sufficient space, avoiding being squeezed.

As the LoS framework addresses all passenger areas that are fundamental for their processing, I think the improved LoS will not only improve security and immigration, but the whole passenger journey at the airport, on the departures, arrivals and transfer side. With the improved LoS we can support enhancing the overall passenger experience!

Momberger Airport Information: How does the LoS help airports compare their competitive status with that of other airports? Are there now clearer standards for service level comparisons?
Jürgen Renner: Every year during spring time we all hear about hundreds of airports being awarded – at least the ones that participate in these customer satisfaction programs. These programs are based on passenger surveys covering many different service aspects – from waiting times, Wi-Fi quality, toilet cleanliness etc. Essentially all these results are based on passenger perception, representing a qualitative and rather subjective service evaluation.

The IATA LoS Assessment is fundamentally different. The LoS is based on the measurement of the LoS KPIs (space, waiting times, seating and occupancy) during a typical busy day – i.e. by comparing the measured KPIs with the agreed LoS OPTIMUM industry guidelines the LoS evaluation is of quantitative nature (not qualitative like the passenger surveys), thus an objective evaluation.

When we conduct Independent LoS Assessments on behalf of airports, we typically analyze where they currently stand in terms of LoS, i.e. we compare their current performance to the LoS Industry Guidelines and KPIs agreed by IATA and ACI. Through this study we can inform airports in which terminal areas the performance is good (achieving OPTIMUM or above) and, more importantly, we identify the sub-systems that represent current capacity bottlenecks, resulting in poor service levels for the passengers (SUB-OPTIMUM or even UNDER-PROVIDED).

So overall, rather than doing a service benchmarking with other airports, the main purpose of the LoS Concept is to objectively assess where airports stand in terms of LoS and then to potentially tackle areas of concern.

Momberger Airport Information: How will the new framework help airports better prepare for future growth, improved passenger flow and faster processing times before flight departures and after flight arrivals?

Jürgen Renner: As indicated before, by conducting a LoS Assessment for a future situation, i.e. by simulating the expected increased passenger flows during a future typical busy day in the year 2025, we can anticipate what the LoS at each terminal sub-system will be – should we see problematic areas, then we can work together with the airport and identify optimizations. This information is absolutely essential for airports – in order to be prepared for the future, ensuring that there will be sufficient capacity to process the future passenger with a good service level. With increased competition, especially in the transfer segment, it is of utmost importance that airports offer a good service level and efficient facilities – to also enable an effective transfer process with overall low connection times.

Momberger Airport Information: Do you expect the new LoS framework to influence airport terminal building designs in the future? Has architectural and airport planning expertise been utilized in the development of the new LoS?

Jürgen Renner: After the release of the 10th edition of our ADRM, I think it took some time until the aviation community became aware that there are now new LoS guidelines applicable. Actually, there are still some stakeholders who are not aware about these new principles – this is why we at IATA decided to start with a Global Level of Service Initiative – in order to create more awareness and to promote the improved LoS Concept and to also inform about IATA’s LoS Consulting services. As part of this initiative,
we engage globally with many different airport stakeholders (CAAs, airports), e.g. by arranging workshops or conducting presentations at major aviation event and conferences. I must say we are seeing now major progress and a lot interest in this matter – more and more airport stakeholders understand the new Concept and its advantages – and more importantly, they are using the new LoS in their regulatory frameworks (CAAs) or within their airport development program (airports). Already two years ago I was informed that a major airport in the Middle East has revised the terminal design brief – changing from LoS “A” to “OPTIMUM”. I was very pleased to hear about this and it made my day!

Momberger Airport Information: How does the new LoS framework help balance an improved airport experience for users with keeping costs of ATB operations and development/expansion at reasonable levels?

Jürgen Renner: I think with the new LoS Guidelines specifying an OPTIMUM range – e.g. the queuing space at security to be within 1.0-1.2 sqm/PAX and waiting times to range between 5-10min – we found a good compromise for operating or developing terminal infrastructure in a cost-effective manner as we can avoid the under- or over-providing of facilities or related space. In the example of security control, with the OPTIMUM range of 5-10min of maximum waiting time (during peaks!), we make it clear that there is no need to achieve a shorter waiting time than the 5 minutes – which would require many more security lanes to be installed (CAPEX) and operated (OPEX). Targeting a waiting time of less than 5 minutes would represent an OVER-DESIGN approach that should be avoid. The same principle applies to the space provision. So, to conclude, following the LoS OPTIMUM guidelines ensures cost-effective terminal operation and development and keeping costs at reasonable levels!

Momberger Airport Information: Do the evolving airport technologies, like Internet of Things, Cloud-based IT (eliminating data silos), passenger self-service facilities and smart devices help implement better solutions for rapid air travel growth?

Jürgen Renner: Absolutely – all these new features can help in improving the capacity situation within terminals and thus result in better service levels. In order words, if correctly applied, these new technologies can enhance the passenger experience and LoS.

Momberger Airport Information: Can you describe examples where the new LoS helped airports better cope with traffic growth challenges?

Jürgen Renner: Since we have released the new LoS Guidelines, we have conducted quite a few LoS Assessment projects around the world – ranging from very small airports (< 0.5 MAP) to large hub airports (> 50 MAP). We did projects using a more simplified assessment approach in order to evaluate (on a higher level) the currently provided LoS and to provide some qualitative recommendations for improvements. More often, we did very detailed LoS Assessment studies where we used a very
sophisticated approach – to not only evaluate the current situation but also to assess how the service level will be in the future. For this sophisticated approach we were using a comprehensive simulation tool that can properly reflect all the dynamic aspects of passenger processing and behaviors. For instance, in one project we could prove to both the private airport operator and the supervising Governmental entity that the planned terminal expansion design would not allow the future passenger volumes to be processed with an OPTIMUM LoS, i.e. we could demonstrate that the expansion program was not appropriate in some areas as capacity bottlenecks (and related poor service levels) would occur in the upcoming years. Based on the many findings of our LoS Assessment study, the airport operator took action and revised the initial expansion design according, making it future-proof and thereby optimizing their investment and ensuring future improved passenger experiences. #1069.24

Is Your Airport Terminal Operating At An Optimum Level?

IATA’s Level of Service (LoS) Concept is the industry benchmark for optimum passenger terminal facilities.

**DEPARTURE**

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**ARRIVAL**

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