

Audit of the IT platform NOVA for public transport

Swiss Federal Railways

Key facts

Swiss Federal Railways (SBB) implemented the NOVA platform (new public transport connection) on behalf of the sector between 2012 and 2018 with the 100 million franc project called "Central pricing system" (ZPS). It replaces the obsolete central pricing and sales base systems for public transport and is thus the new industry solution. 85 transport companies and fare associations already sell public transport products via NOVA. As at 31.12.2018, this corresponded to around 300 products which are offered via the 46 connected sales channels (e.g. web shops, ticket vending machines, ticket booths), covering approximately 80% of total public transport turnover. Daily turnover via the NOVA platform increased steadily in 2018 and amounted to as much as CHF 11 million at the end of the year, with 300,000 products sold. Annual turnover in 2018 was around CHF 1.4 billion. Ultimately, the total public transport revenue of around CHF 6 billion per year is to be sold via the platform and broken down among the transport companies and fare associations that provide services.

The Swiss Federal Audit Office (SFAO) carried out an IT application audit at SBB, the developer and operator of the NOVA platform. The focus was on ensuring the correct calculation of offers, the correct and complete breakdown of products and the measures taken to ensure reliable operation of the platform and its functions.

The SFAO considers most of the measures taken to ensure the correct calculation of offers and product accounting to be appropriate. No errors were found in the course of the audit, although the spot checks used cannot be regarded as representative. Significant improvements have to be made in terms of quality assurance and transparency in change management. The products sold and settled with NOVA are transferred to SAP correctly and in full.

NOVA proves its worth in day-to-day operation and offers timely management information

The SFAO found that the NOVA platform largely meets its requirements and proves effective under severe pressure during day-to-day operation. The system handles 5,000 price enquiries, 3,500 offers and 350 sales per minute at peak times. This corresponded to around 50 million sales in 2018. Unlike the previous system, NOVA allows new sales or each product sold to be retrieved and evaluated individually in real time. This will create new possibilities for timely controlling and monitoring of financial flows from sales for transport companies and fare associations in the future.

The ZPS project was formally completed at the end of 2018. Remaining items are now being processed and areas that have not yet been fully transferred to operating mode are being finalised on an ongoing basis. In addition, the operating organisation has to be adapted. Core processes such as the migration of further products from the legacy system, the maintenance of master data and the operation and further development of the platform will be carried out largely by the same people as those who worked on the project. This will have a positive impact on the transfer of knowledge and process consistency, but it also entails risks, e.g. in the case of employee absences.

The maturity of quality assurance and of the internal control system has to be increased

Following the gradual deployment of the system, the ongoing migration of new products and the expansion to other sales channels, the documentation, processes and corresponding control mechanisms are now to be finalised or expanded in specific areas.

There is a need for improvement especially with regard to quality assurance in the core process of master data management. Although the SFAO considers the controls envisaged in that area to be appropriate overall and their design is oriented towards the main process risks, they are only partially formalised or their description is no longer up to date. As a result, the dependency on a small number of specialists is also high. It takes a great deal of time and effort to track processes and the controls carried out, e.g. in the case of data entry or acceptance before going live. The Excel sheets widely used for controls are not entirely suitable because of their limited protection against changes. The SFAO found that there is a lack of adequate comprehensibility and transparency in processes and control activities. Consequently, it recommends introducing a tool-based workflow for the change and acceptance processes for master data management, with a uniform ordering process that systematically includes fare owners. The lifecycles of fares and products and their ongoing changes should also be documented in a database. The SFAO recommends strengthening quality assurance due to the financial data initiated in NOVA and explicitly including NOVA as a financially relevant system in the internal control system (ICS). The key controls in processes should be integrated into the ICS and formalised.

The platform is stable, but security can be improved

The availability target of 99.5% for the NOVA platform was generally clearly exceeded. Problems and malfunctions that occur are processed together with ongoing changes as part of a continual improvement process and are put into operation. The measures to ensure service continuity should be checked more thoroughly with proactive, scenario-based tests. An overarching concept needs to be developed and implemented for arranging authorisations. Moreover, the SFAO recommends updating the security documentation and carrying out security audits more regularly.

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