Directory

Rolling Stock

Yellow Window

Yellow Window's Integrated Product-Service-Systems Design (PSS) for Higher Passenger Satisfaction

Celebrating two Red Dot awards for Brussels MIVB/STIB, design agency Yellow Window illustrates the case for more integrated design solutions in the public transport sector.

Integrated System Building for Customer Appreciation

Passenger satisfaction is vital in building successful public transport (PT) systems, few would disagree. However, it's not just one factor to manage here, but a string of experiences throughout the journey. Each step of the way counts. Optimising, for example, the on-board vehicle experience or the overall network changeovers are important, but a passenger would always value their journey in its entirety – as an experience, a system and a service. Beyond being painless, today's journeys should be rewarding and seamless.

This 'integrated experience', however, does not seem to come naturally to the public transport sector. In PT ecosystems, manufacturers typically still focus on the products, operators manage the service and transport authorities are to oversee the whole system. Perhaps this is the root cause for the lack of integration and coherence (not ignoring large complexities in e.g.

legacy, stakeholders or franchising). The fact remains that people have other mobility alternatives, some of which are easier, more service-oriented as well as more enjoyable, integrated and coherent to use.

Product-Service Systems in Public Shared Services

The socio-economic shift from ownership to usage – where consumers (in)voluntarily own less (of the) products and increasingly consume services – drives the increased attention towards the design of integrated product-service systems (PSS).

Product-service systems (PPS) are an integrated approach to designing products and services supported by network actors, to better meet the needs of customers, sustainability and efficiency.

PSS design centres on the complete user experience. With entire industries shifting focus to service aspects and experience, it's interesting to see how the public transport sector reacts – as PT inherently shares many of the PSS key principles: functionality over ownership, pay-per-ride (actual usage), sharing, collaboration and networking, fostering of long-term relationships and environmental and social sustainability.

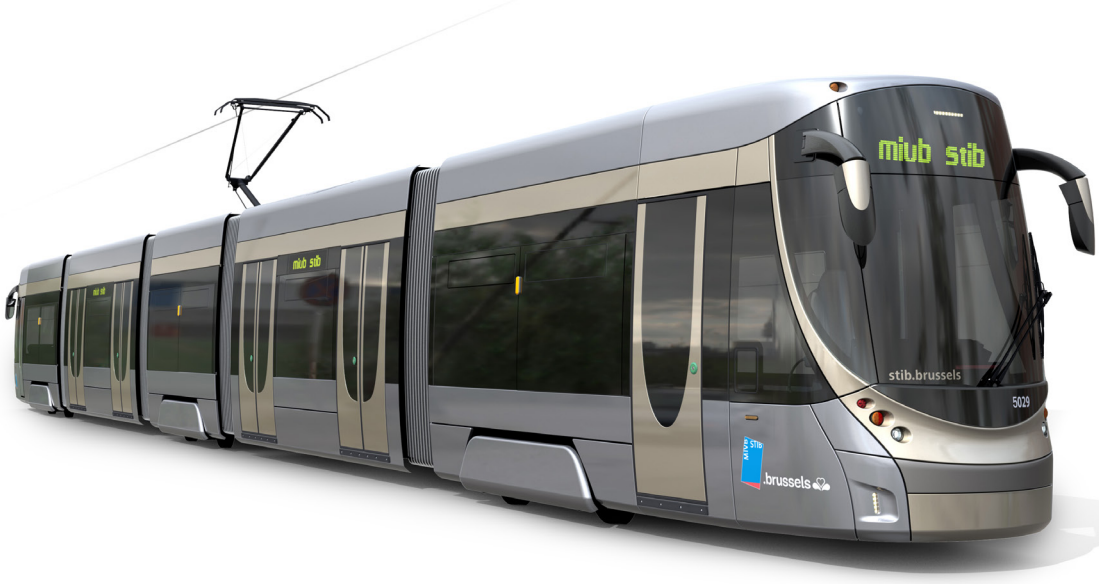
We have been advocating for years that the PT sector should incorporate PSS design more seriously. When it comes to designing rail – and public transport solutions in general, Yellow Window has long applied integrated design approaches. It led the studio to expand beyond product design and widen its scope into service and policy design early this century.

PSS design approaches are relevant – as a holistic, user-centred discipline, design has always been an integrating factor. PSS design strives to get a 360° outlook for the service / product combination that PT is. It strives to embed the design of rolling stock and infrastructure in a seamless and convenient experience for passengers, while optimising resources and reducing the environmental impact. And now we have a double bespoke international design award to prove its case.

The Case for Integrated Design

Yellow Window has worked for over 20 years with Brussels' public transport operator MIVB/STIB in a holistic product-service approach to deliver significantly higher satisfaction rates. To illustrate the impact of integrated solutions, we list below some key elements that were considered when designing public shared services for MIVB/STIB, as can be found in the latest Alstom TNG tram added to the fleet.

- **A unique system identity** is important for STIB/MIVB. Equally being a symbol for the citizens of Brussels as well as for the operator, or the city as European capital. The organic influences and material inspiration are based on Art Nouveau – but beyond being a reference to Brussels and its past, its modern materialisation adds a warm and humane character to the system. The identity is also being extended over infrastructures, such as e-bus charging or the Clear Channel metro signs in the pipeline.



reddot winner 2023

- **Multi-modal vehicle integration:** Yellow Window led the horizontal integration of various modes of transportation (buses, trams, metros and infrastructures) into one recognisable fleet, with a unique design language and experience. Vertically, the new vehicles better integrate last mile solutions (bicycles, scooters) while improving accessibility for prams and wheelchairs.

- **User-centred touchpoints and infrastructures:** all vehicles share a strong focus on passenger comfort and convenience. Natural materials are used where possible. Inclusivity and diversity are built-in – through alternative accessibility options as well as a diverse array of options to stand or sit on board.

- **User centred optimisation:** through analysing passenger behaviour and modelling of flows, we've identified bottlenecks and devised ways to optimise interiors. The newest vehicles feature adaptive layouts to mediate demand and adjust service levels between comfort, efficiency, and capacity. Involving users and wider stakeholders in the process improves alignment of the design with the diverse needs and preferences and embracing the service.

- **State-of-the-art vehicles:** to encourage and shift mindsets towards sustainable and shared transportation, respecting the passengers is a must. Convenient, seductive and qualitative vehicles are yielding great ROIs, from increased ridership to reduced vandalism. Confirming the design quality are the operators latest CAF metro and Alstom trams receiving Red Dot design awards this year.

- **Proactive procurement:** to acquire these qualitative and customised vehicles from the market, we translated the service requirements towards the industry and engaging them in a productive dialogue. Multi-stakeholder and user needs were translated into realistic concept designs as a prerequisite in the tender specifications.

- **Safety:** to share the road responsibly, the TNG tram features unique safety features to mitigate potential impact with 'soft modes'. Ranging from a nearly 180-degree drivers view, to soft (foamed) materials covering all front parts below the glazing, and a cylindrical front shape design to deflect any persons / objects coming in contact.

- **Security:** to improve the security perception within its metro stations, Yellow Window introduced multidisciplinary service design techniques in security evaluations of metro stations, setting the stage for recommendations and guideline development. To relieve anxiety on board, open yet warm, respectful vehicles interiors have become the norm.

Summary

This selection of elements integrated by our PSS design approach helped to enhance Brussels' public transport system to become more attractive, accessible and efficient – aiming to encourage more citizens into choosing the system as their preferred mode of travel. While these examples cover a decade-long journey and still do not cover the entire system, an increase is seen in ridership and satisfaction, and ultimately on the city's liveability and sustainability.

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