SwissCal Conference on the Swiss Public Transportation Ecosystem

Final Report

April 28, 2022

Southern California Association of Governments (SCAG)

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Executive Summary

In February and March of 2022, twenty representatives from the Southern California Association of Governments (SCAG), including sixteen members of the SCAG Regional Council, participated in the SwissCal Conference on the Swiss Public Transportation Ecosystem. The goal of the virtual conference, which connected senior leaders and professionals from across California with senior Swiss transit experts, was to learn about Swiss best practices associated with transit coordination that could be applied in Southern California. The virtual conference was organized by non-profit Seamless Bay Area, and included three other co-hosting partners: LA Metro, Stanford University Bill Lane Center for the American West, and Caltrans.

Swiss representatives presented virtually from Switzerland about how public transit is structured across the country and its regions in such a way that delivers very high transit ridership and seamless customer experience in an environment with many different local transit agencies and a fragmented set of local governments. Following six hours of conference sessions with Swiss presenters, SCAG participants participated in a two hour follow-up workshop to reflect upon lessons learned and develop a set of actions to advance improved coordination within the next 1-2 years.

Conference participants identified eleven main themes from the various presentations as being relevant to California regions:

Themes of SwissCal Presentations identified by participants as most relevant to California

- ▶ Organization & Roles of Different Levels of Government*
- ▶ Customer Experience
- ▶ Customer Information
- ▶ Coordinated Service / Schedules**
- ▶ Standards / Quality Control
- ▶ Developing Political Leadership and Perseverance to Pursue Change**
- ▶ System Leadership - Designating certain coordination authority to operators
- ▶ Collaboration / Cooperation / Culture*
- ▶ Fare Integration & Ticketing**
- ▶ TOD / Land Use*
- ▶ Mobility Management / Emerging Mobility Integration

**Indicates Top 3 themes among SCAG conference participants
*Indicates Top 6 themes among SCAG conference participants

At the final workshop of the SwissCal conference, SCAG participants ranked the top three themes for the SCAG region to focus on in the next 1-2 years as:

- ► Fare Integration & Ticketing
- ► Coordinated Service / Schedules, and
- ► Developing Political Leadership and Perseverance to Pursue Change

The next three highest ranked theme areas included organization & roles of different levels of government, developing a more collaborative/ cooperative culture, and addressing TOD/land use challenges.

Finally, corresponding to some of the highest ranked themes, conference participants from SCAG brainstormed a potential series of initial actions to advance within 1-2 years, including:

- ► **Fare Integration & Ticketing**
  - ▷ Piloting a reduced or free fare program around specific, major events to encourage transit use, as well as a free/reduced fare program for students; with advertising/ marketing in advance
  - ▷ Evolving existing agreement structures on fares with operators; develop fare integration pilots and metrics to measure benefits
- ► **Coordinating service/schedules**
  - ▷ Pursuing complete clockface schedules through Metrolink
  - ▷ Rebalancing service throughout the day to respond to changing customer needs due to the pandemic; while still leading a discussion about operating funding.
- ► **Developing Political Leadership and Perseverance to Pursue Change**
  - ▷ Developing a clear vision of transit integration that can be used as a blueprint, and encourage more transit champions.
- ► **Customer Experience**
  - ▷ Piloting volunteer transit ambassador program as part of specific event(s) to

improve the customer experience

  - ▷ Developing customer experience standards for cities & transit agencies to utilize
  - ▷ Integrating trip planning tools into Metrolink mobile ticketing app re-procurement;
- ► **Standards, System Leadership**
  - ▷ Developing data standards for the region's transit providers, possibly by assigning a major transit agency as a 'system leader'.

Next Steps include:

- ► Staff will coordinate a report out from a participating Regional Council member on SwissCal to the Transportation Committee and RC (late Spring 2022).
- ► Staff will present findings from the Mobility as a Service (MaaS) Feasibility White Paper to the Transportation Committee (late Spring 2022).
- ► Findings and recommendations from SwissCal and the MaaS study will provide the foundation for policy discussions with the Transportation Committee as part of the 2024 Connect SoCal update (Summer/Fall 2022).
- ► Staff will seek direction and input from the Transportation Committee on policies and strategies to be included in Connect SoCal as well as future Overall Work Program tasks (Winter 2022 through Summer 2023).

1 | Introduction

Source

The SwissCal Virtual Conference on the Swiss Public Transportation Ecosystem was hosted in partnership with Caltrans, LA Metro, Southern California Association of Governments, Stanford University's Bill Lane Center, the Metropolitan Transportation Commission, SPUR and other partners across three two-hour conference sessions on February 1st, 8th, and 22nd as well as three region-specific workshops on March 1st, 2nd, 4th.

The conference offered Californian policymakers and senior leaders rare access to Swiss transportation experts who presented on how their system is structured to provide a seamless transit experience for riders in an environment with many local agencies and jurisdictions. This effective system of coordination has been identified in the California State Rail Plan as a model for California. It offered an opportunity to do a 'deep dive' into a particular model of networked transit that is likely to be considered in the regionally-led studies, but which is less well understood in the United States.

Goals and Objectives

Specific goals of the conference were to:

▶ Expand understanding of how to deliver a rider-first seamless transit experience across fragmented and complex jurisdictions;

▶ Learn from best practices from Switzerland's highly effective public transportation ecosystem;

▶ Understand institutional arrangements that enable seamless coordination; including roles of:

▷ State/Federal Governments

▷ Industry Association

▷ Regional Governments

▷ Transit Agencies

▷ Local Jurisdictions

▷ Private Sector; and

▶ Identify actionable steps applicable to each California region

Conference Agenda

During the first three two-hour sessions of the conference, participants got direct access to Swiss transportation experts, presenting virtually from Switzerland, on a range of subjects including integrated service planning, customer experience, payment, mobility-as-a service, and other topics. The Swiss experts came from a variety of Swiss authorities including the Federal Government, Swiss Railways (SBB), Alliance Swisspass, Regional Transport Associations, and private Swiss transportation companies.

Conference Agenda (continued)

The following is the complete agenda for the conference speakers:

Session 1: Why Switzerland and Regulatory Overview	Session 2: Understanding Roles in Delivering Seamless Transit & Fares	Session 3: User Experience Innovation & Translating to California	Session 4: Regional Wrap-Up Workshops
Feb. 1, 2022, 8-10am PST / 17h-19h CET	**Feb 8, 2022**, 8-10am PST / 17h-19h CET	**Feb 22, 2022** 8-10am PST / 17h-19h CET	Regional workshops convene a subset of participants in 3 seperate sessions:
`8:00-8:30` **Welcome & Context Setting for California Policymakers**	`8:00-8:10` **Recap of Session 1 Learnings**	`8:00-8:30` **Recap of Sessions 1 + 2 Learnings**	
Ian Griffiths, Policy Director, **Seamless Bay Area**	`8:10-8:40` **Role of Transit Operator & Industry Association**	`8:30-9:15` **Role of Startups and Private Vendors**	**March 1, 2022**
Kyle Gradinger, Chief, DRMT, **Caltrans**	Bernhard Adamek, Vice Director, **VOV/UTP (Association of Swiss Transit Operators)**	Jonas Lutz, Head of Product & Marketing , **FAIRTIQ**	8-10am PST *Southern California Association of Governments (SCAG)*
Kome Ajise, Executive Director, **SCAG**	`8:40-9:10` **Role of National Regional Rail Provider in User Experience**	`9:15-9:45` **Governance and Integrating with Emerging Mobility**	
Mark Vallianatos, Executive Officer, OEI, **LA Metro**	Eva Krueger, Customer Experience & Insights	Arnd Bätzner, Member of the Board of Directors, **Mobility Carsharing**	-----------------------
Alix Bockelman, Deputy Executive Director, **MTC**	Daniel Boos, Product Owner, User Experience **Swiss National Railways (SBB)**	`9:45-10:00` **Applying Swiss Practices to California**	**March 2, 2022**
`8:30-9:15` **Overview of Swiss Transport Ecosystem / Role of Federal Government / Regulatory Landscape**	`9:10-9:40` **Role of Public Sector Decision-makers / Local and Regional authorities**	Kyle Gradinger, Chief Division of Rail and Mass Transportation, **Caltrans**	9-11am PST *LA Metro*
Anna Barbara Remund, Vice Director of Infrastructure, **Swiss Federal Office of Transport (FOT)**	Anne Hornung-Soukup, Chair of the Board of Directors, **Transports Public Genevois (TPG)**	`9:45-10:00` **Facilitated wrap-up discussion**	-----------------------
`9:15-9:45` **Role of Agreement between Operators & Tariff communities**	`9:40-10:00` **Facilitated wrap-up discussion**		**March 4, 2022**
Kathrin Räss, Project Leader, **Alliance SwissPass**			9:30-11:30am PST *Northern California / San Francisco Bay Area*
`9:45-10:00` **Facilitated wrap-up discussion**			

Three final sessions were held on March 1, 2, and 4th, each with a different sub-regional focus, with the goal of distilling pertinent lessons for each region and identifying opportunities to apply best practices.

California Regions vs. Switzerland: A Snapshot

(representations of each region are at same scale)

	Switzerland[1]	San Francisco Bay Area Region (MTC)	Southern California Region (SCAG)
Population	8.63 million	7.75 million	19.1 million
Area	15,940 sq. mi.	7,000 sq. mi.	38,000 sq. mi.
Pre-COVID Transit Mode Share (% of All Trips)	21%	4-6%[2]	3-5%[3]
Average Daily Miles Traveled	22.9 miles (2016)	22.9 miles (2015)[4]	23.2 miles (2016)[5]

The following pages provide a summary of key learnings from each session. Full presentations from each of the presenters are available in the appendix to this report.

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1 https://www.bfs.admin.ch/bfs/en/home/statistics/mobility-transport/passenger-transport/travel-behaviour.html
2 UCLA What's Behind Recent Transit Ridership Declines in the Bay Area? (2020)
3 UCLA Falling Transit Ridership: California & Southern California (2018)
4 https://bayareaequityatlas.org/sites/default/files/Final_9_County_BayAreaProfile_0.pdf
5 https://scag.ca.gov/sites/main/files/file-attachments/0903fconnectsocal-05-plan.pdf?1604533599

2 | Summary of Swiss Transportation Expert Presentations

Summary of Session 1: Why Switzerland & Regulatory Overview

Presenters:

Anna Barbara Remund
Vice Director and Head of the Infrastructure Division,
Swiss Federal Office of Transport

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Kathrin Räss
Project Leader,
Alliance Swisspass

Alliance Swiss Pass⁺

Main Takeaways:

▶ **Switzerland has one of the highest ridership transit networks in the world,** despite being a country with four language regions, a complex geography, and hundreds of different transit operators.

▶ **Coordination is viewed as key to its success,** which is done at both a federal and regional level.

▶ **A critical factor in its successful coordination is the federal government setting goals and standards for the system as a whole.**

▶ **An organized industry association plays a central role,** collaborating across multiple operators to develop unified plans on how to meet the federal goals and standards. An example of this is the federal requirement of providing "direct service", or unified fares, requiring transit operators to maintain and regularly update a unified fare structure.

▶ **The federal government also sometimes designates a specific transit operator to lead coordination among transit companies,** such as in the areas of customer information and setting real time data standards.

Overview of Swiss Transport Ecosystem / Role of Federal Government / Regulatory Landscape

Switzerland is a small country with a population of 8.6 million people. It is slightly more populous than the San Francisco Bay Area and double the area in terms of size. Only about 8% of Switzerland represents settled areas, so a strong public transportation system serves as a vital connection between different regions and destinations.

Despite the country's size, Switzerland has a total of 460 transportation companies, which includes 80 railway companies. There are different actors at each level who play a key role in ensuring seamlessness in the Swiss transport system.

Public transit in Switzerland is generally organized into three different levels:

Governmental Level:

The federal government, or the Federal Office of Transport (FOT), oversees strategic planning and fully finances railway infrastructure, is the safety authority for the entire public transport sector, and defines the legal framework for public transport in Switzerland.

The cantonal actors (roughly analogous to "counties" in the US) and municipalities, are the other actors at the governmental level. They are in charge of financing regional and local transport services.

Semi-Public Level:

At the semi-public level are companies that are entirely or partially owned by the state. They operate a majority of the transit and oversee some aspects of coordination when such authority is delegated to them by the FOT. The FOT sets targets for them for a period of four years at a time, and these targets are reviewed on a regular basis. The semi-public companies and associations are free to implement these targets in any way they see fit.

"Private" Level:

While called the "private" level, this tier consists mostly of publicly-owned and governed public transit operators. Most transit operators are arms-length companies fully owned by public jurisdictions. However, fully private (and not publicly-owned) companies are also included in this level.

Swiss public transport's structured timetable shortens connections and travel times for users. Public transport is treated as one system regardless of the connection a rider is using (bus, tram, rail, etc.).
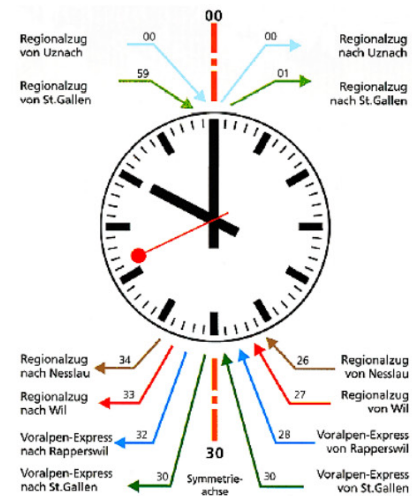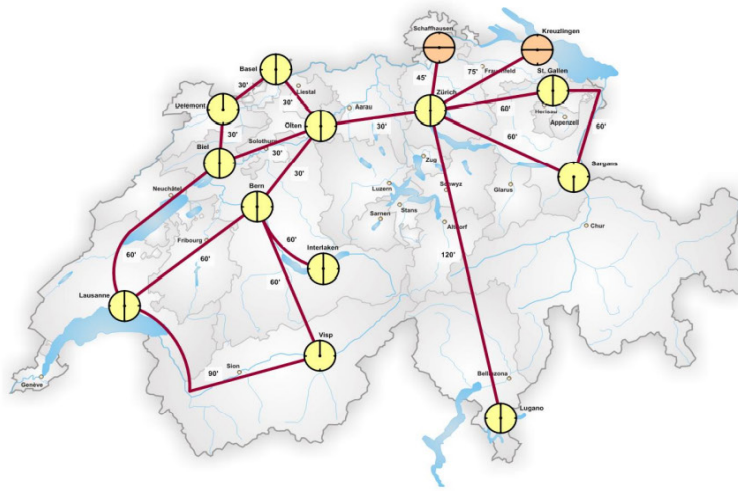
Switzerland utilizes the concept of the node principle and a structured timetable for its transit scheduling. This means that long distance trains
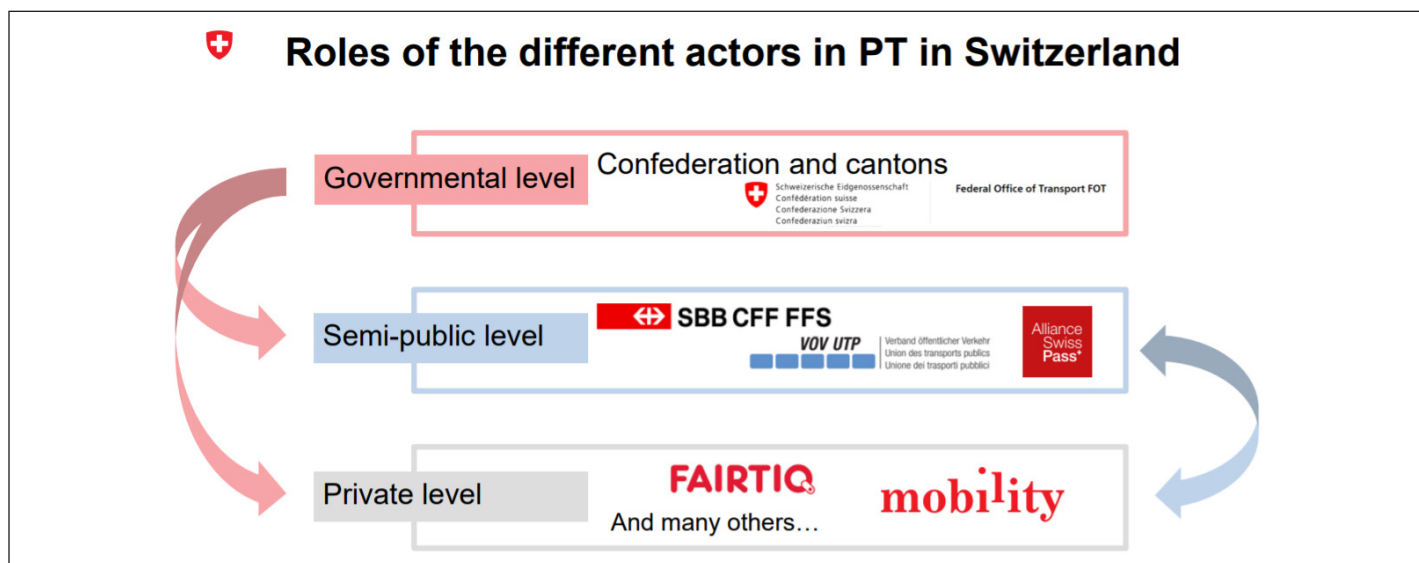
Slide from Remund's presentation showing the three main levels of institutions in the Swiss public transport ecosystem.

Remund's presentation demonstrating the principle of 'clockface' scheduling across key transit nodes.

leave right after the hour and reach the next big station right before the hour. At the corresponding connection, a rider can change to another long distance train, leaving again, just after the hour. They can also catch a regional train or bus as their timetables are coordinated with the time tables of the long distance trains.

Role of Agreements between Operators & Tariff Communities

There is one ticket for the entire Swiss public transport system, which is referred to as "direct service." This is a legal obligation for all public transport providers and requires close cooperation between public transport providers. Through this direct service system, customers are able to buy simple and universal multi-modal, one-way trip tickets as well as travel cards and travel passes that are valid for multiple forms of transportation. This enables the user to have choices while using the system. They can choose any train or operator and just need to arrive the same day. All 250 operators and 18 fare network associations sell the tickets. Longer distances are discounted.

## Fare Collection and Fare Distribution Across Operators

Half of the cost of transit in Switzerland is covered by the user, and the other half is covered by subsidies from the confederation, cantons, and municipalities. Alliance SwissPass, the transport companies, and fare network associations work on products that include all-inclusive travel cards and passes, as well as common rules and standards for tickets. This is crucial to securing income. The NOVA platform, used for ticketing across operators, is a common database on the sales backend.

Fare revenue distribution for tickets that use only one transit agency is straightforward. To distribute income from travel passes such as one-day tickets, where riders may use multiple agencies, Alliance SwissPass conducts regular surveys of usage. Respondents are asked to fill out a questionnaire on their public transportation usage patterns over a given week. Alliance SwissPass is working to improve and test more accurate ways of assessing usage via sensors in vehicles.
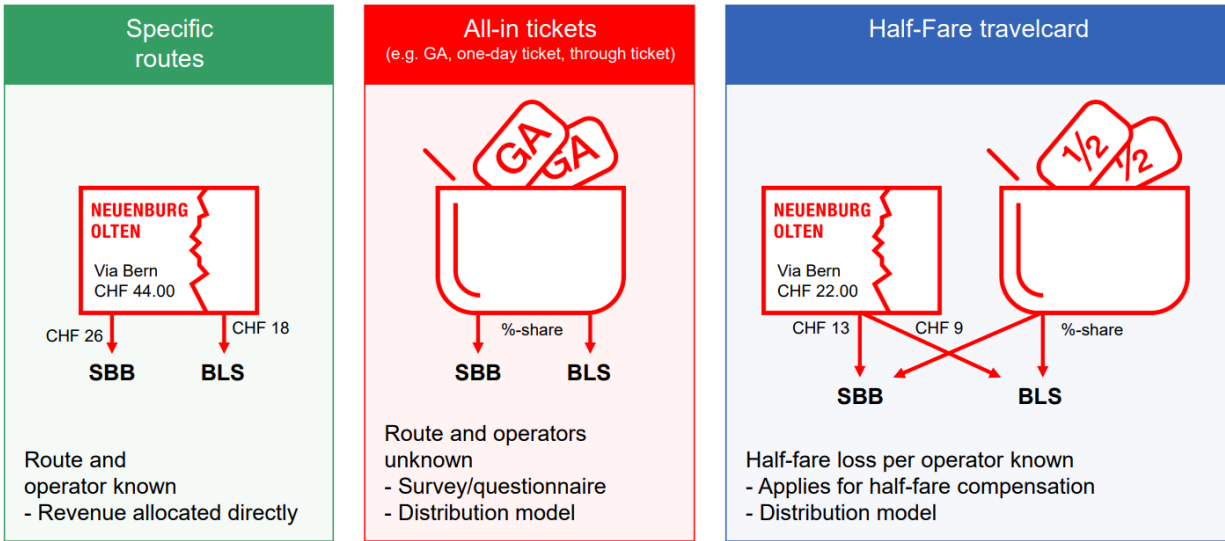
Key slide from Rass' presentation demonstrating how revenues from integrating ticketing products are distributed among multiple operators.

Summary of Session 2: Understanding Roles in Delivering Seamless Transit & Fares

Presenters:

Bernhard Adamek
Vice Director,
Association of Swiss Transit Operators (VOV/UTP)

VÖV UTP | Verband öffentlicher Verkehr
Union des transports publics
Unione dei trasporti pubblici

Eva Krueger
Customer Experience & Insights,
Swiss National Railways (SBB)

SBB CFF FFS

Daniel Boos
Product Owner, User Experience,
Swiss National Railways (SBB)

Anne Hornung-Soukup
Chair of the Board of Directors,
Transports Public Genevois (TPG)

tpg

Main Takeaways:

▶ **The association of Swiss public transit operators (VOV/UTP) holds a unique role within the Swiss public transit system,** with many of its goals and requirements set out by the Federal government. The industry association collaborates across its many operators through a number of specialized commissions to develop standards and undertake joint programs such as workforce development and training.

▶ **SBB, the national rail agency, provides leadership at a nation-wide scale in creating a unified customer experience,** investing heavily in internal specialists that oversee a range of programs focused on collecting user feedback, deploying new technologies, and inter-agency collaboration.

▶ **Despite the federal framework for coordination, local transit agency operators have an important role to play in spearheading local coordination.** Perseverance and commitment to serving the needs of riders is essential to overcoming complex jurisdictional challenges - which may take many years - but which are viewed ultimately as worthwhile and an important component to gradual improvement of the system. In the case of Geneva, perseverance despite the existence of international boundaries led to the creation of an international rail line and a common fare pass between France and Switzerland.

Role of Transit Operators & Industry Association

A Cooperation-Based Model of Public Transport

The National Association of Public Transport Operators (UTP) is an umbrella organization of public transport companies in Switzerland. It includes 130 "full" members who represent a variety of Swiss transit operators such as railway companies, bus companies, and funicular/aerial railway companies and 180 "friendly" members which include industrial and business enterprises, associations, and educational institutes.

The Federal Office of Transport (FOT) established the legislative framework that ensures a cooperation-based model of public transport in Switzerland. FOT licenses transport operators and outlines requirements operators must meet. There are many transport operators in different geographical and legal contexts who must follow the same standards established by the confederation and the cantons (roughly analogous to "counties" in the US). Some of the rationale at UTP behind the pooling of interests includes the promotion of best practices in customer-friendly public transport solutions and the standardization of technical regulations for railway companies.

Essentially, the federal government gives directions about desired outcomes of the transit network, and it's the industry sector itself that works on how these technical regulations should be implemented on a daily basis.

Another role that UTP plays is in leading workforce development and training for the public transit sector in Switzerland, working in partnership with the Swiss government. The Swiss educational system employs a dual track approach to learning. Workforce development entails on-the-job training (apprenticeships) and vocational school to learn theory. UTP is the recognized organization within public transport for all educational and professional development in the sector. Along with members in the educational commission, they come together to determine content for this

learning. They also collaborate with authorities and other stakeholders, including schools.

Role of National Regional Rail Provider in User Experience

A Seamless Customer Experience

There are many places where Swiss transport users can get transit information. One place where they can get information is through mobile apps. Mobile apps help with ticketing, include timetables, provide real-time information, and recommendations if a train or bus is running late. They look simple, but involve a lot of coordination and data standardization.
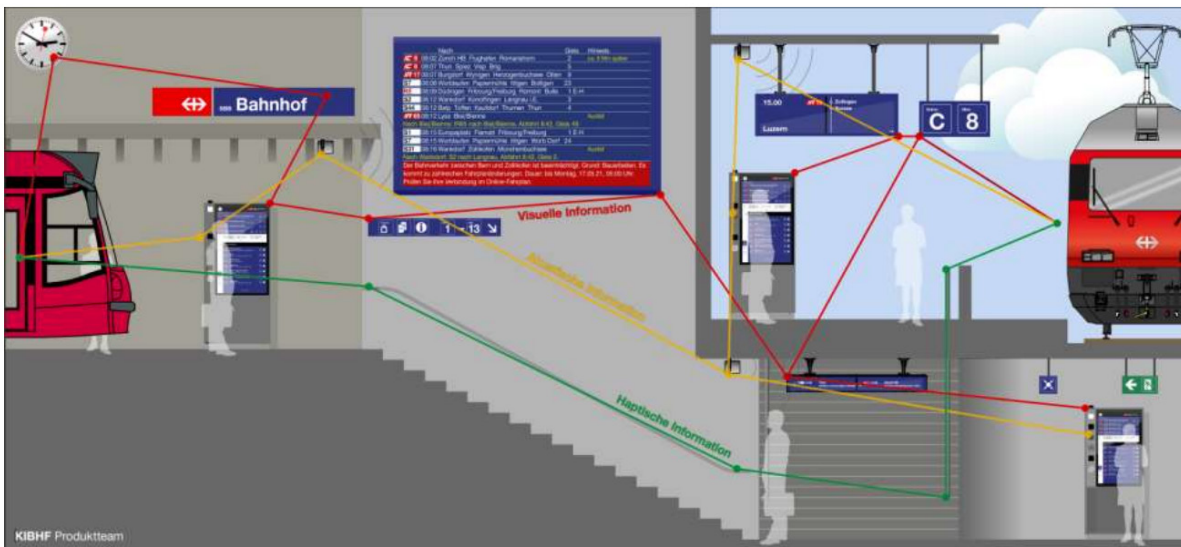
One aspect that is key to the customer experience is the positioning of transit-related information. On the tram, users get display information from the tram operator that shows what the next stops are, but they also get information on different connections (see image). At larger train stations, there is usually large signage (shown in the middle of the image) that has current track times and information if there is a delay or change. It also displays information if there is a disturbance somewhere, and what riders can do next. Train stations also have other information readily available to help riders plan their trip better.

SBB provides a variety of additional services to improve the customer experience, coordinating with external parties. For example, they work with ski regions to combine ski tickets with train tickets, so customers only buy a single ticket. Users can even load their ski pass onto their SwissPass. SBB also works with providers to combine different event tickets with train tickets. SBB even provides luggage service, picking up luggage from a customer's starting location and bringing it to their destination.

Slide from Krueger & Boos' presentation showing the different touchpoints of customer information within a user's journey through a transit station.

According to SBB, to ensure a seamless customer experience, transit providers should 1) invest in a customer centric culture and customer experience competencies, 2) collaborate across divisions and companies with a vision about the seamless experience, and 3) orchestrate seamlessness across channels and touch points.

Role of Public Sector Decision-makers/ Local and Regional Authorities

The Canton of Geneva and Coordination Across Borders

Switzerland has a unique confederation system that is built on cooperation between regions. There is also a national commitment to climate change, which underlies the country's broader commitment to public transit. At the national level, they plan to reduce emissions by 90%, reduce car travel by 40%, and double public transport usage from 21% to 40%, by the year 2050. The Geneva canton hopes to reduce emissions by 30%, reduce car travel by 40-50%, and increase the usage of public transit by 2030.

Transit has not always been highly coordinated either at the national level or at the regional level. In Geneva, there has been an evolution towards coordination in particular over the past twenty years, with Unireso, the common fare association for the canton of Geneva, having only been created in 2001. Switzerland's first regional fare association, in the Zurich region, was only created in 1990.

The Unireso pass works within the canton (county) of Geneva canton, while the LemanPass allows the user to travel around/between eight different zones in the greater Geneva area, which includes many parts of France (the canton of Geneva is surrounded by France on most sides). One can purchase a Unireso or LemanPass through agencies and third party vendors; ticket machines at stations; bus and tram stops; rural buses; on apps or websites; and also through SMS. The SMS system for purchasing tickets was launched in 2012. It required France to change its national law to allow purchasing the pass through SMS.

Now that same system is all over France. While the specific challenge of having to connect transit across an international boundary does not exist in the Bay Area or Southern California, Hornung Soukup's example of the LemanPass and the train connecting the two countries nevertheless demonstrates how with the perseverance of transit agency leaders, and a focus on putting the customer first to promote seamless mobility, these jurisdictional obstacles can be overcome. She noted several examples of where French law had to be amended to allow for seamless integration - and yet that was viewed as worth doing, as quality mobility is seen as important to both countries' climate and livability goals.
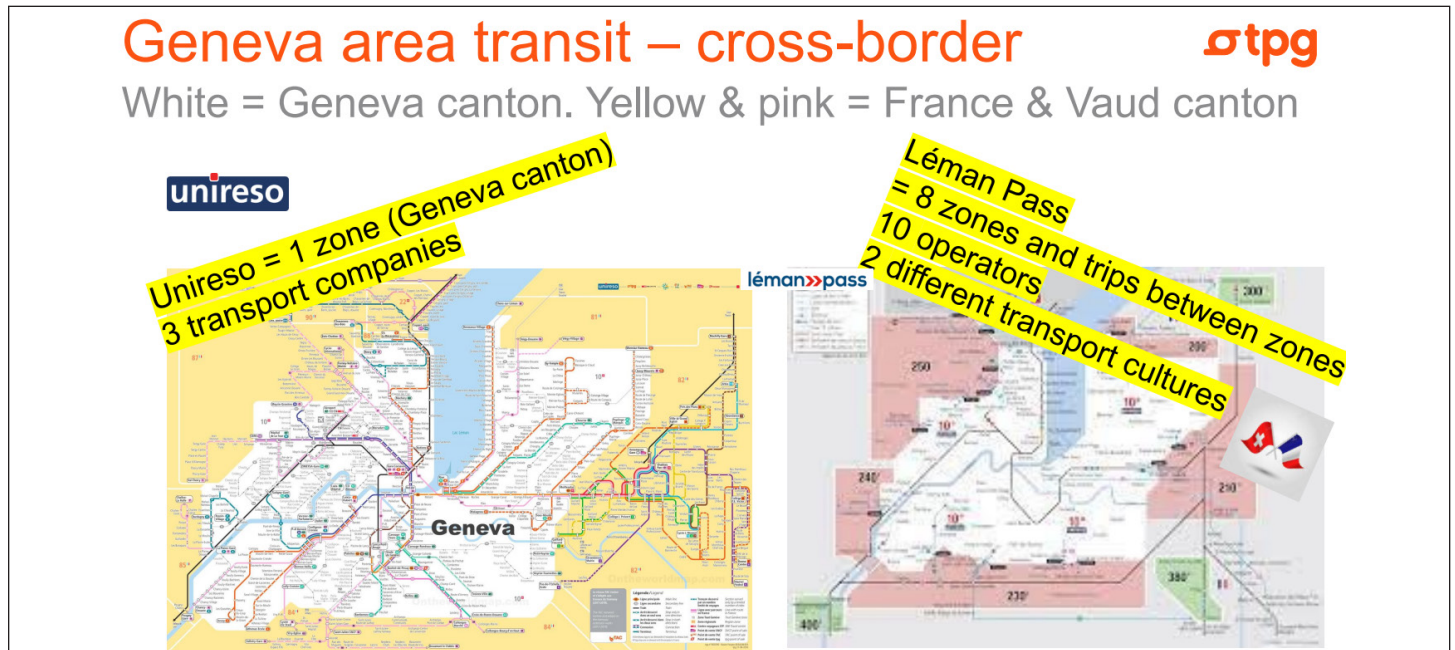
Slide fron Hornung-Soukup's presentation showing the Canton of Geneva's transit network and fare zone on the left, and the broader region on the right. The creation of the cross-border LemanPass to accompany the new train was revolutionary in terms of fare networks in Switzerland and especially in the Geneva area. Fares apply only if a trip crosses the border between Switzerland and France. Every trip has a specific fare based on departure and arrival stations or urban zones and distance.

Summary of Session 3: User Experience Innovation & Translating to California

Presenters:

Jonas Lutz
Head of Product & Marketing,
FAIRTIQ

Arnd Bätzner
Member of the Board of Directors,
Mobility Carsharing

Kyle Gradinger
Division Chief,
Caltrans Division of Rail and Mass Transportation

Main Takeaways:

▶ **Several important conditions in Switzerland's transport ecosystem have enabled the innovation of easy to use mobile ticketing technologies** such as the FAIRTIQ app across the entire country: Existing rules & regulations (including common definitions of users, the common NOVA database) and pooled marketing and investment in the technology among operators.

▶ **Switzerland employs a national strategy regarding emerging mobility,** including a national car share operator. It is integrated with the national public transportation network, in terms of both the planning of the networks - pods of shared vehicles and bikes placed at key hubs - and integrated on fare payment products and media.

▶ **The state of California's approach to transit and rail planning is adopting Swiss practices.** The state supports the establishment of distinct roles and responsibilities for different levels of government in California (strategic/network planning, implementation/project development, and service delivery); service–led network design principles (structured timetables); and a phased implementation approach for major infrastructure projects (long-term development).

Role of Startups and Private Vendors

One Swipe for Your Entire Transit Journey

FAIRTIQ, a Swiss mobile app launched five years ago created with the aim to make a rider's journey easier. Through a single swipe, a transit rider can travel from one destination to another, accessing any of the 250 Swiss transit operators, without knowing which service provider they will use, how much it will cost, or having to pre-load funds. Agencies receive the appropriate revenue, while also benefiting from origin-destination data as a by-product of this system.
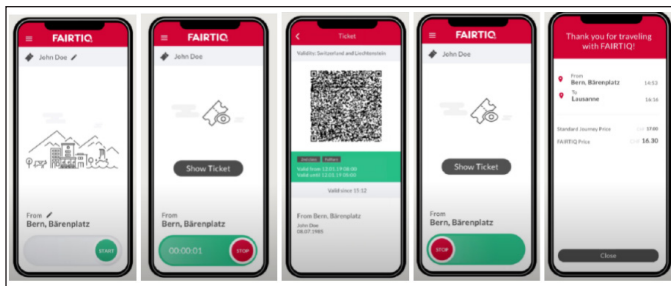
The rider swipes START from left to right to begin their journey (image 1). The correct ticket is then generated for the user based on the smartphone's location (image 2). The rider can show the ticket to ride on any system (image 3). Once finished traveling, the rider swipes left to end their journey (image 4) and then an optimized ticket price is generated according to tariff rules (image 5).

Within five years, FAIRTIQ has grown from use on just three initial operators to all 250 operators in the system.

In Switzerland, there are five layers of tariffs for public transportation: local tariffs (short-distance prices), regional tariffs, regional tariff overlaps, metaregional tariffs, and the national tariff (direct service). After a rider completes their journey, the app checks from all those layers of tariffs to determine the best fare, taking away that burden from the user.

FAIRTIQ's success in Switzerland is built off several conditions related to the Swiss transport ecosystem's overall structure:

▶ Close collaboration and mutual trust among operators

▶ Leveraging existing rules and regulations and creating new rules only where needed: There

are already integrated fares at the regional level and established statewide, distance-based fares in which all operators participate. Additionally, there are designated agencies who distribute cash collected.

▶ Cross-selling of tickets and having a central broker (the NOVA system)

▶ Common definitions: A child is a child everywhere (someone under the age of 6). Children travel for free.

▶ Common standards: Barcode standard for tickets (started as an SMS standard then a QR code that can be retrieved through the NOVA platform)

▶ Understanding barriers and pooling resources: FAIRTIQ had worked in distribution ticketing before at SBB, so they knew developing and creating an app would be challenging for operators and challenging to maintain. Thus, they pooled financial resources. Every new partner that joined would pay its share of a reasonably-priced technology that it would not be able to finance itself. As a result, there was no need to reinvent the wheel; one app is available everywhere, is easy to use, and remains the same across operators.

▶ Open-source data: FAIRTIQ does not have run after all the data as SBB provides General Transit Feed Specification (GTFS) data for each transit operator.

Governance and Integrating with Emerging Mobility

Emerging Mobility as an Extension of the Public Transportation System

Switzerland has a national strategy for emerging mobility, especially carshare, which is integrated with the national public transportation network. Mobility Carsharing, which covers the majority of organized carshare in the country, has 1,300 carshare pods nationwide, leveraging public transportation hubs for its vehicle locations.

Carshare vehicles are branded with public transportation provider logos, signaling that they are part of the national public transportation network. This shows they are not a private vehicle, but a public one.

The carshare vehicles offered include both round trip and free-floating (one-way) vehicles, serving the different needs that users might have. They are available at convenient locations like different airports and rail stations. In addition to carshare vehicles, Mobility has also rolled out scooters that travelers can use. All of these modes can be unlocked using a SwissPass, the national ticketing system.
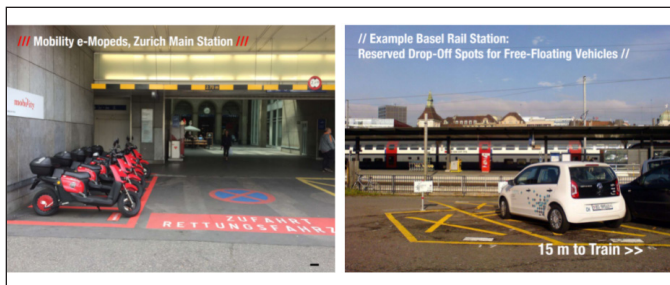
Mobility works with regional rail providers to prioritize access close to train platforms.

Applying Swiss Practices to California

The 2022 California State Rail Plan: Swiss Inspirations, California Applications

Swiss practices are already being adopted by the state of California, with the following areas as a source of inspiration:

1. Setting effective roles and responsibilities;

2. Service-led network design principles (a structured timetable);

3. Phased implementation (long-term development).

Setting effective roles and responsibilities

Having effective transportation network integration demands that California has effective planning and governance integration.

Currently, there can be confusion about roles and responsibilities which leads to siloed efforts and duplicate work, as well as stranded investments and incompatible solutions. As a result, users face the consequences of this uncoordinated governance every day. Thus, having a clear strategic planning framework and network design principles can be used to guide downstream implementation planning and project development. This approach ensures service delivery is consistent and serves the public good. In this vision, each transportation entity should be able to develop the analysis that is appropriate to the level of detail and technical precision for the task. This will require significant coordination across different levels of government.

Service-led network design principles (a structured timetable)

Caltrans is planning for designing a future with an integrated statewide network with similar technical approaches to the Swiss. Specifically, it hopes to design a statewide service planning framework around connected hubs or transfer nodes and delivered through repeated pulse schedules (structured timetables) where trains will meet at stations at regular intervals, reducing

travel times and ensuring connectivity throughout the network. Ultimately, this will also minimize capital costs and operations costs.

The agency's 2022 California State Rail Plan, currently being developed, will have a 2050 long-term vision.The Rail Plan establishes California's strategic vision and the framework for partners to coordinate.

Policy Goals and Tactical Tools within the California State Rail Plan

Caltrans seeks to lead analysis, policy, and funding at the statewide level, while working with regions to determine the shared vision for the statewide transportation network. They are working towards planning and funding a mode-agnostic platform for statewide mobility for delivering equity (moving from peak-hour service to robust all-day, competitive service with designed connections between services) and responding to the climate emergency. They are also working to deliver statewide fare integration and design-targeted fare discounts by working with the California State Transportation Agency to develop the California Integrated Travel Plan (CAL-ITP).

Phased Implementation

The Caltrain Business Plan was cited as an example of the application of Swiss principles.

In terms of setting effective roles and responsibilities, Caltrain was able to leverage this strategic framework for a long-term vision of blended service between Caltrain and high-speed rail on the Peninsula corridor.

In terms of design principles, the statewide network design principles for regularized scheduled timed connections and pulse style service allows the corridor to serve local express and high-speed service while minimizing additional infrastructure investment.

In terms of phased implementation, the technical work developed for the plan provides direct input to statewide modeling of future iterations of the Rail Plan and other regional efforts like Link 21 (the new Transbay passenger rail crossing between Oakland and San Francisco).

Gradinger closed by mentioning that the success of the Swiss network provided not just aspiration, but inspiration, for California. It did not just inform the network that California wishes it had, but instead it informs how it will plan, design, and ultimately deliver it.

Slide from Gradinger's presentation summarizing the goals of the State Rail Plan.

3 | Follow-up Workshop Summary

Goals

The goals of the SCAG follow-up workshop on March 1st from 8-10am were to:

- Articulate lessons learned from the Swiss presenters at the first three sessions that are applicable to the SCAG region
- Identify additional needs / challenges with current coordination efforts
- Prioritize areas for progress
- Identify potential actions to advance over the next 1-2 years

Participants

The following were representatives from SCAG who participated in the SwissCal conference; those with an asterisk participated in all or a portion of the final fourth workshop on March 1st, 2022.

Regional Council Members

- Ali Saleh, RC Member, City of Bell
- Andrew Masiel, RC Member, Pechanga
- *Art Brown, RC Member, City of Buena Park
- *Carol A. Moore, RC Member, City of Laguna Woods
- *Colleen Wallace, RC Member, City of Banning
- Crystal Ruiz, RC Member, City of San Jacinto
- *Dennis Michael, RC Member, City of Rancho Cucamonga
- Frank Yokoyama, RC Member, City of Cerritos
- *Jan Harnik, RC Member, City of Palm Desert, RCTC

- *John Dutrey, RC Member, City of Montclair
- Larry McCallon, RC Member, City of Highland
- Peggy Huang, RC Member, City of Yorba Linda
- Ray Hamada, RC Member, City of Bellflower
- Shari Horne, RC Member, City of Laguna Woods
- *Trish Kelley, RC Member, City of Mission Viejo
- Wes Speake, RC Member, City of Corona

Agency Staff

- *Philip Law, Manager, Mobility Planning and Goods Movement, SCAG
- *Priscilla Freduah-Agyemang, Senior Regional Planner, SCAG
- *Lorelle Moe-Luna, Multimodal Services Director, RCTC
- *Roderick Diaz, Director of Planning, Metrolink

Challenges and Opportunities

Following a presentation from SCAG staff providing background on relevant SCAG initiatives, including Connect SoCal 2050 and the Mobility as a Service (MaaS) Study and white paper, participants brainstormed challenges and potential opportunities for the SCAG region in applying Swiss practices to improve public transit and coordination:

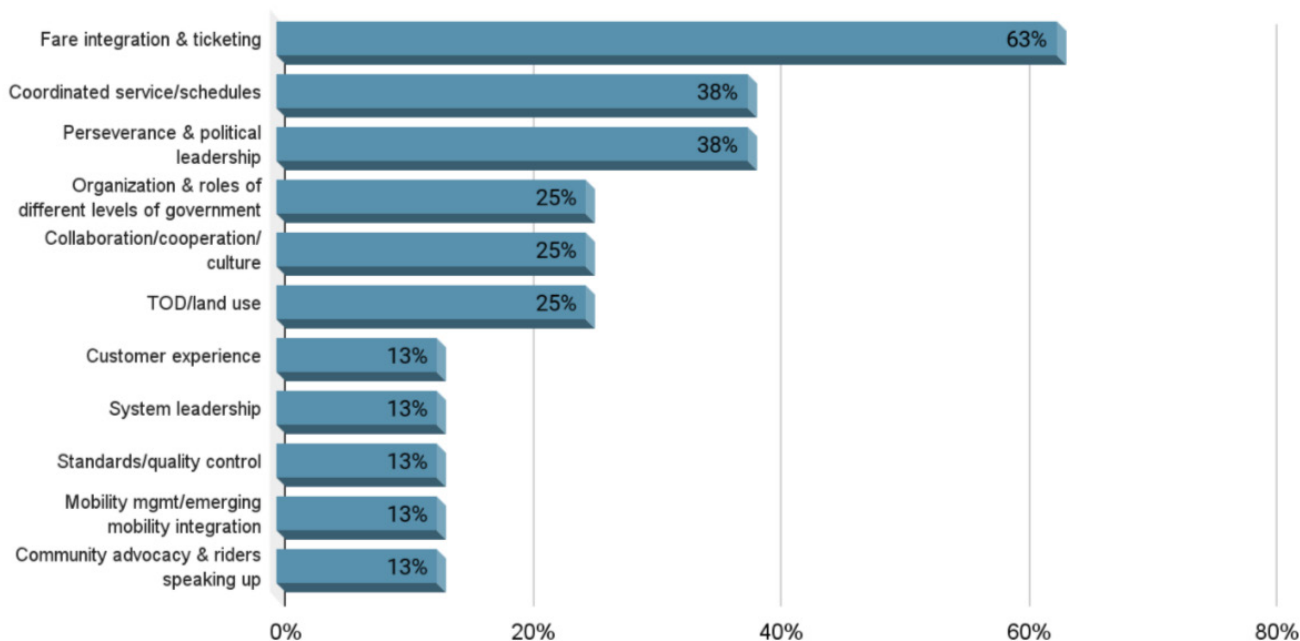| Challenges	Opportunities
▸ Pre-COVID: Falling transit ridership/increased access to personal vehicles ▸ COVID Challenges: Public health concerns, driver shortages ▸ Lack of coordination between agencies / lack of interoperability ▸ Pre-existing land use ▸ Grade separations needed for efficient rail service ▸ High price tag on rail; lack of funding ▸ LA Transit system seems complicated and intimidating to many ▸ Business cases are hard to make and are a revenue risk. Not a big enough issue for individual elected officials - siloed budgets and no incentive to collaborate, rather a disincentive to.	▸ Congestion getting worse - people are looking for alternatives ▸ Many transit stations with TOD potential to build ridership ▸ Start small focusing on customer user stories and serve them very well, e.g. families (kids love transit), teens ▸ Agencies can make it more pleasant, more enjoyable through better coordination and standards. Give people the experience of good transit - show how good it can be - then people will shift - make it competitive. ▸ Create political will for change for coordination - California can-do attitude ▸ Basic level of interoperability through Metrolink ticket, Surfliner - let's build on this, promote it ▸ Focus on transit-supportive areas instead of car-focused areas to build a strong foundation for better transit ▸ Focus on all-day service; fill out the schedule to improve reliability ▸ 'Vertical takeoff' - efficient new option, could it be integrated? ▸ Price of gas is going up

Key Themes and Prioritization

After each of the three first days of the conference, workshop participants were asked what policies or practices from the Swiss experience seemed most applicable to California regions. The responses to this question, which were collected using an online polling software, Slido, were arranged on a Google Jamboard, clustered into eleven themes:

- ► Organization & Roles of Different Levels of Government
- ► Customer Experience
- ► Customer Information
- ► Coordinated Service / Schedules
- ► Standards / Quality Control
- ► Developing Political Leadership and Perseverance to Pursue Change
- ► System Leadership - Designating certain coordination authority to operators

- ► Collaboration / Cooperation / Culture
- ► Fare Integration & Ticketing
- ► TOD / Land Use
- ► Mobility Management / Emerging Mobility Integration

On the following page is the full set of responses to the question "Which practices or policies seem most applicable to your region in California?" displayed on a virtual 'Jamboard', grouped by theme:

Which of these seamless transit opportunity areas should the SCAG region focus on in the next 1-2 years? Pick the top 3. (n=8)

Opportunity area	%
Fare integration & ticketing	63%
Coordinated service/schedules	38%
Perseverance & political leadership	38%
Organization & roles of different levels of government	25%
Collaboration/cooperation/culture	25%
TOD/land use	25%
Customer experience	13%
System leadership	13%
Standards/quality control	13%
Mobility mgmt/emerging mobility integration	13%
Community advocacy & riders speaking up	13%

Participants were polled on which seamless transit opportunity areas the SCAG region should prioritize in the next 1-2 years. The graph is a breakdown of those responses.

What felt most relevant?

organization & roles of different levels of government

Federal and state governments' involvement in facilitating the legislative process and promotion for single fare, single cohesive system. Public transport companies help each other.

The difference in in the role of the "federal" governments is striking.

The high-level state planning, MPO level, and local level planning at different stages in development

Integrated governance

Layers of gov't/quasi public agencies down and up of policy authority and delivery

designating certain coordination authority to operators (system leadership)

The approach the Swiss Federal Office of Transport takes by designating an individual transport operator as the lead coordinator (across all operators) for a particular issue.

Delegating regional coordination duties to operators.

standards / quality control

Organizing gov't when scale/ standards make sense

Having a "quality control system" for transit

Standardization - Timetables, Fares, Definitions, etc.

Coordination around standards/ emerging technology.

fare integration & ticketing

How to divide revenue from an all-agency pass

Being able to buy the ticket from multiple locations/formats

fare integration - practice of multiple operators coordinating fare integration and taking on the burden as opposed to the public

One ticket system

A better universal fare card

What fare costs.

Needing government subsidies to standardize ticketing/fares

Shared decision on fare pricing and distribution of fare revenue

One ticket for everything

Universal transit passes

Fare integration

Seem less trip planning and fare payment

Intergovernmental agreements for cost and revenue sharing

Integrated fares

Universal fare structure

fare integration

Ability to combine heterogenous fare structures within an integrated system

Universal fare system is key

customer experience

The beautiful video with vision of a seamless trip is a great goal for both CA and Switzerland, but the Swiss are much closer to delivering.

measuring customer experience (painpoints, touchpoints)

everything should be customer oriented

Customer service and experience across agencies

Seamless high quality customer experience

perseverance & political leadership

Patience... These policies take a LONG time to implement!

The part where it takes several centuries to get any meaningful political thing done

TOD/land use

transit oriented development

Land use

universal fare media

Integrated fares and leveraging political will is important

customer information

Single source of transit information

On passenger-centric information, the slide about how to think about different senses as shown in the graphic of the staircase to the train platform was really enlightening.

mobile app

collaboration / cooperation / culture

Collaboration between operators is similar to how we work currently

How cross border issues were managed between agencies.

Cooperation

Institutional relationships among mobility providers

I love the way you make it all seamless, all companies working together.

mobility management / emerging mobility integration

More proactive integration of private (TNC, car share etc) services with public transit.

the practice that is most noticeable is focusing on removing cars, not just replacing gas with electric....that need more roads, etc.

Reducing the number of automobiles is a challenge for present plans encourage car ownership, such as creating more charging stations, but perhaps starting with smaller areas would help implementation of shared vehicles

more intermodal integration

Getting cars off the roads and integrating travel.

not allowing TNCs on the most congested streets

coordinated service / schedules

Fare coordination and clock face schedules

Pulse scheduling, integrated ticketing

Funding, timetable integration

Service optimization and equity

clock scheduling

Pulse scheduling

Integrated service planning and optimization among multiple agencies

Pulse scheduling in so cal region with 3 different providers

Planning based on timetable goals

Unified Planning Approach

other

riders pay 50% of the cost

I loved seeing how Swiss practices and ideas has been adapted to the needs of California!

statewide rail plan

seeing return on investment in transit

"Lines" for buses. Does that mean dedicated lanes?

Initial Actions to Advance within 1-2 Years

Participants were then separated into smaller groups and asked to discuss these themes and attempt to translate into statements of findings applicable to the SCAG region. The following are a summary of major theme areas and summarized findings based on the breakout groups, organized by theme they relate to.

Long Term Goal	Initial Action to Advance within 1-2 years:	Potential lead agency	Potential partners
Fare Integration & Ticketing			
Integrate transit fares	Evolve existing agreement structure on fares with operators; develop fare integration pilots and metrics to measure benefits	Metrolink + SCAG	Bus operators, connecting rail operators
Coordinating service/schedules			
More operating funding for service frequency (bad service sends captive riders to cars and keeps discretionary riders away from transit.)	Investigate the impact of the pandemic on customer needs across the region; seek to provide framework for rebalancing service throughout the day, but still lead a discussion about operating funding.	SCAG, State legislative representatives	Transit Agencies, Counties, and other levels of government
Schedule integration	Complete clockface schedules	Metrolink	Bus operators, connecting rail operators

Initial Actions to Advance within 1-2 Years (continued)

Long Term Goal	Initial Action to Advance within 1-2 years:	Potential lead agency	Potential partners
Developing Political Leadership and Perseverance to Pursue Change			
Ambitious target to increase modeshare	Need a vision. A plan can be a blueprint. Encourage transit champions.	Every level of government should have targets and work together. Specifically, SCAG and county transportation commissions have a key role to play.	Local transit agencies
Customer Experience			
Improving customer experience through consistency (e.g. more bus shelters and flag stops) and reducing transit anxiety. Make customer information easy to understand and available everywhere	Pilot volunteer transit ambassador program as part of specific event (e.g., festival, large sporting events, Olympics)	Transit agencies/ authorities	Other agencies, local service organizations (e.g. Elk's Club), local transit/train enthusiasts
	Develop customer experience standards for Cities / transit agencies to utilize	SCAG	Transit agencies, Cities, Counties, County Transportation Commissions
Integrated trip planning	Integrate Trip planning tools into Metrolink mobile ticketing app re-procurement	Metrolink	Bus operators, connecting rail operators
Standards / System Leadership			
Data sharing (crucial for so many areas - freight passenger transport. Key to effecting change)	Assign 'system leader' responsibility to lead data standards for the region.	SCAG in partnership with Regional Transit Technical Advisory Committee (RTTAC), Caltrans	Transit Agencies, County Transportation Commissions

Initial Actions to Advance within 1-2 Years (continued)

Long Term Goal	Initial Action to Advance within 1-2 years:	Potential lead agency	Potential partners
Other			
Promotion of transit	Reduced or free fare program around specific, major events to encourage transit use, as well as a free/reduced fare program for students; with advertising/marketing in advance. Educate students and also reach parents (want to reach as many people as possible and remove barriers)	AQMD, MPOs, School district, local universities	City/county transportation departments, transit agencies, Sierra Club-type organizations
Mobility management	Connection between public safety and transit - connect with GoHuman campaign; transit as one mobility component	SCAG and transit agencies	Local jurisdictions, transit advocates, community organizations

4 | Next Steps

- ▶ Staff will coordinate a report out from a participating Regional Council member on SwissCal to the Transportation Committee and RC (late Spring 2022).

- ▶ Staff will present findings from the Mobility as a Service (MaaS) Feasibility White Paper to the Transportation Committee (late Spring 2022).

- ▶ Findings and recommendations from SwissCal and the MaaS study will provide the foundation for policy discussions with the Transportation Committee as part of the 2024 Connect SoCal update (Summer/Fall 2022).

- ▶ Staff will continue to track potentially relevant state initiatives - for example, AB 1938, Transit and Intercity Rail Recovery Task Force - that may affect policies and/or funding that can support greater regional integration (2022 and beyond).

Acknowledgements

Swiss Presenters:

- **Anna Barbara Remund**, Swiss Federal Office of Transport
- **Anne Hornung-Soukup**, Transports Public Genevois (TPG)
- Arnd Bätzner, Mobility Carsharing
- **Bernhard Adamek**, Association of Swiss Transit Operators (VOV/UTP)
- **Daniel Boos**, Swiss National Railways (SBB)
- **Eva Krueger**, Swiss National Railways (SBB)
- **Jonas Lutz**, FAIRTIQ
- **Kathrin Räss**, Alliance SwissPass

Co-Hosting Partners:

- **Kyle Gradinger**, Caltrans
- **Priscilla Freduah-Agyemang**, Southern California Association of Governments (SCAG)
- Philip Law, Southern California Association of Governments (SCAG)
- Mark Vallianatos, LA Metro
- Stanford University's Bill Lane Center for the American West

- **Adina Levin**, Seamless Bay Area
- **Ian Griffiths**, Seamless Bay Area
- Sana Ahmed, Seamless Bay Area
- **Antoine Belaieff**, FAIRTIQ

Appendix: Links to Presentations, Recordings, and Breakout Jamboards

Feb 1, 2022: Session 1 Presentations

▸ 8:00-8:30am | [Welcome & Context Setting for California Policymakers](#) (Key Partners: Seamless Bay Area, SCAG, Caltrans, LA Metro, MTC)

▸ 8:30-9:15am | [Overview of Swiss Transport Ecosystem / Role of Federal Government / Regulatory Landscape](#) (Anna Barbara Remund, Vice Director of Infrastructure, Swiss Federal Office of Transport)

▸ 9:15-9:45am | [Role of Agreement between Operators & Tariff communities](#) (Kathrin Räss, Project Leader, Alliance Swisspass)

Feb 1, 2022: Session 1 Additional Resources

▸ [Session 1 Recording](#)

▸ [Session 1 Recap Blog Post](#)

Feb 8, 2022: Session 2 Presentations

▸ 8:10-8:40am | [Role of Transit Operators & Industry Association](#) (Bernhard Adamek, Vice Director, VOV/UTP - Association of Swiss Transit Operators)

▸ 8:40-9:10am | [Role of National Regional Rail Provider in User Experience](#) (Eva Krueger, Customer Experience & Insights and Daniel Boos, Product Owner, User Experience, Swiss National Railways - SBB)

▸ 9:10-9:40am | [Role of Public Sector Decision-makers / Local and Regional authorities](#) (Anne Hornung-Soukup, Chair of the Board of Directors, Transports Public Genevois - TPG)

Feb 8, 2022: Session 2 Additional Resources

▸ [Session 2 Recording](#)

▸ [Session 2 Recap Blog Post](#)

Feb 22, 2022: Session 3 Presentations

▸ 8:10-8:30am | [Role of Startups and Private Vendors](#) (Jonas Lutz, Head of Product & Marketing, FAIRTIQ)

▸ 8:30-9:00am | [Governance and Integrating with Emerging Mobility](#) (Arnd Bätzner, Member of the Board of Directors, Mobility Carsharing)

▸ 9:00-9:30am | [Applying Swiss Practices to California](#) (Kyle Gradinger, Chief Division of Rail and Mass Transportation, Caltrans)

Feb 22, 2022: Session 3 Additional Resources

▸ [Session 3 Recording](#)

▸ [Session 3 Recap Blog Post](#)

Mar 1, 2022: Session 4a (SCAG)

▸ [Session 4a Recording](#)

GROUP 1

+Encouraging more interactive and virtual meetings like this

Long Term Goal	Initial Action to Advance within 1-2 years:	Who leads?	Who Supports?
Improving customer experience and reducing transit anxiety	Pilot volunteer transit ambassador program as part of specific event (e.g., festival, large sporting events, Olympics)	Transit agencies/authorities (e.g. RTC)	Other agencies, local service organizations (e.g. Elk's Club), local transit/train enthusiasts, Art Brown?
Fare integration & ticketing	Reduced or free fare program around specific, major events to encourage transit use; with advertising/marketing in advance	**AQMD, MPOs**	Transportation, transit agencies, Sierra Club-type orgs (maybe)
Customer information	Reduced or free fares for students; educate students and also reach parents / **Marketing program**	School district, local universities / Want to reach as many people as possible - reach broadest group possible - and remove barriers	
mobility management	Connection between public safety and transit - connect with GoHuman campaign; transit as one mobility component		

Original Jamboard from Group 1 of the March 1st SCAG workshop

GROUP 2

Long Term Goal	Initial Action to Advance within 1-2 years:	Who leads?	Who Supports?
Consistency in customer experience, including bus stops everywhere	Develop customer experience standards for Cities / transit agencies to follow on bus stops, real time information	**SCAG as convenor**	Transit agencies, Cities, Counties, County Transportation Commissions
Integrated trip planning, schedule integration	Integrating Trip planning tools into mobile ticketing app re-procurement / **Complete clockface schedule**	**Metrolink**	Bus operators, connecting rail operators
Fare Integration	Evolve existing agreement structure on fares with operators / Develop pilots of fare integration to develop metrics on benefits	**Metrolink + SCAG**	Bus operators, connecting rail operators

Original Jamboard from Group 2 of the March 1st SCAG workshop

Original Jamboard from Group 3 of the March 1st SCAG workshop

Seamless Bay Area