

# Integrating Health Systems in British Columbia



## Avato Platform Automation BC Provincial Health Services: Supply Chain

### The Challenge

British Columbia's Provincial Health Services Authority ([PHSA](#)) has “a unique role in BC's health system: to ensure that BC residents have access to a coordinated provincial network of high-quality specialized health-care services.” Serving over five million people with increasing aging demographics and a population steadily growing between five to seven percent every five years, BC's provincial health organization supports a growing need for access to medical services.

A critical part of any health system is ensuring that hospitals and clinics are stocked with the necessary medical supplies.

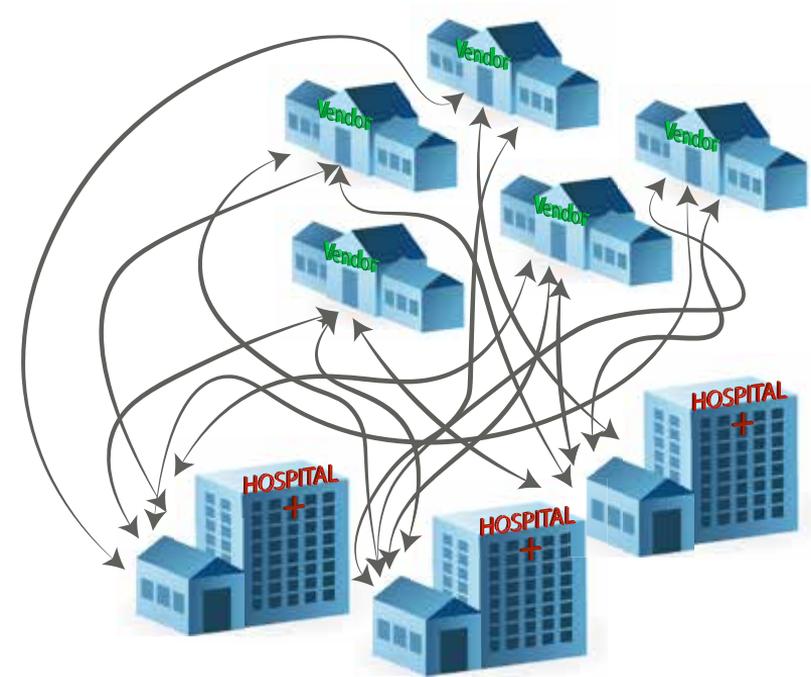


Two of Avato's founders receiving BCIP award from the Honourable Minister Qualtrough in Vancouver in 2018

To help fulfill PHSA's mandate to unite systems and data across the province, BC's provincial health authority turned to Avato (formerly, World West Technologies) for a means to securely unlock incompatible data in disparate health systems spanning organizational and security boundaries.

The Avato (formerly Mobius) hybrid integration platform had recently [won a Build in Canada Innovation award](#) for Avato/Mobius, under which the Canadian federal government was able to kick in over a [half-million dollars](#) to help bring the solution to PHSA<sup>1</sup> and the BC health authorities.

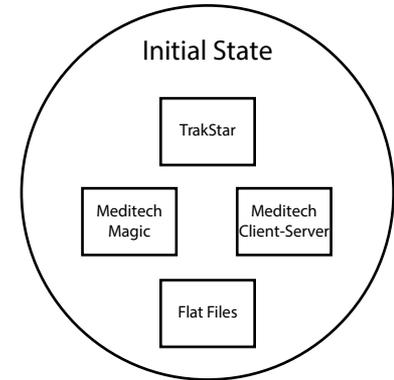
<sup>1</sup> On June 29, 2018, BCCSS and PHSA [amalgamated](#) to form one combined organization



With an increasing number of hospitals, staff, and patients, the need to have the right clinical supplies in the right place at the right time had only become more complex. Dire consequences could occur should the system fail. Medical supply rooms could run out of critical supplies, resulting in canceled surgeries and putting patient care at risk. Clinical space might be filled with supplies taking up room where patients could be treated.

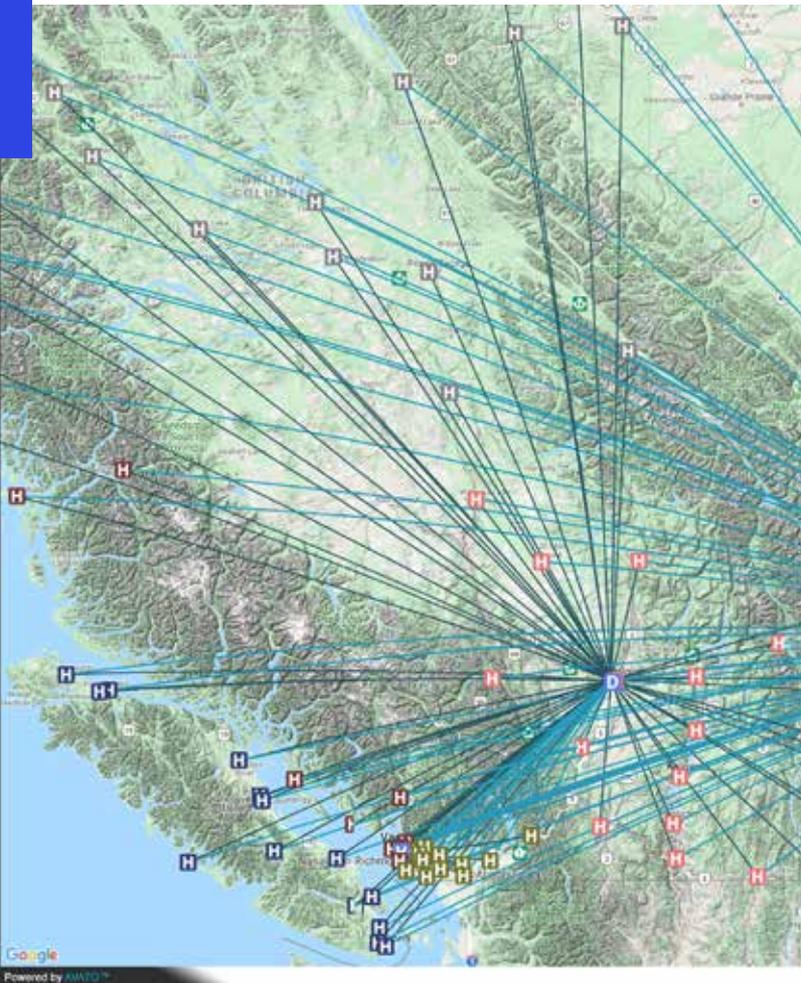


Photo by VIHA



This challenge is acutely felt in rural areas where the delivery of goods carries a longer lead time simply due to the location.

Avato was brought on board to provide a health-authority-spanning solution that would start with the new Comox and Campbell River Hospitals. Recently built, these new [North Island hospitals](#) serve a population of around 50,000. The facilities include an emergency department, maternity ward, operating rooms, outpatient facilities and space for specific non-emergency modalities.



As part of PHSA's mandate to "... establish a provincial approach and action plan for health sector digital and information technology...", the solution needed to be the first steps towards a provincial-scale solution.

Vancouver Island Health Authority had already been ordering supplies from PHSA, which had been provisioning island hospitals from stockpiles at Fraser Health's warehouse facilities in Langley. The process however was not efficient enough to ensure the availability of critical supplies for the new North Island Hospitals, which had neither adequate local island supply chains nor local warehousing space available to avoid shortages. Clinical space had rightly been the priority during the construction of these hospitals.

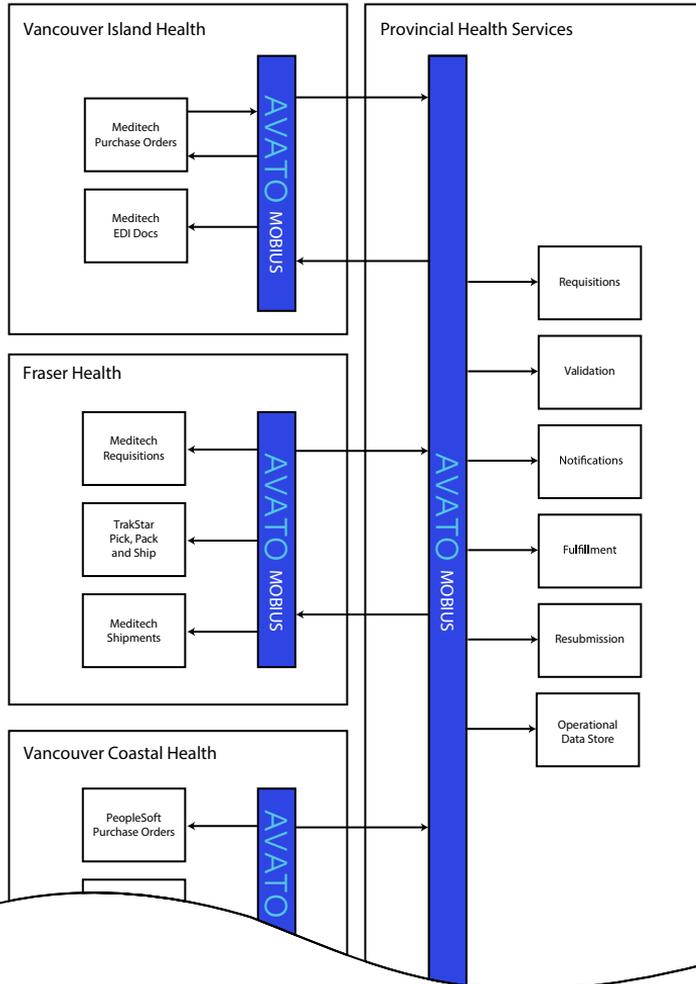
What was needed was reliable integration, communication and automation across the disparate systems in use across Island Health, Provincial Health and Fraser Health, that would allow the health authorities and their systems to reliably and persistently work together in harmony. The solution would need to be able to adapt each of the clinical systems involved so that they could communicate with each other, so that information could be reliably shared, and automation and orchestration could be implemented without requiring replacement or major modifications to the existing clinical and supply-chain systems in use within each region.

## The Solution

The desired remedy was to enhance the applications' abilities to communicate in real-time rather than replace individual applications. Under this design, the data would be read, shared and data-entered automatically in all systems, while providing the supply chain teams with real-time alerts for any data-matching or validation errors. This enabled real-time order placement, inventory management, and the digital exchange of purchase orders, requisitions and invoices, resulting in the successful delivery of supplies to the right place at the right time at the right price.

Often in situations like this, a 'big bang' approach might be considered; replacing all of the existing systems with one 'super-system'. While this approach may be appropriate for certain projects, it is less so when the work that needs to be done is focused on integrating a series of existing systems that are already embedded in the organization and where cost, training and safety considerations are paramount.

PHSA instead chose to leverage the health authorities' existing systems by implementing Avato's Hybrid Integration Platform (HIP), which enabled the existing clinical and supply chain applications to interact reliably across vendor, security and regulatory boundaries. The approach supported PHSA's mandate of "...building capacity and capabilities, leveraging economies of scale and resources, reducing risk and duplication, and increasing interoperability of applications and services across health organizations."



## The Results

The hybrid integration approach raised performance, improved security and broke down the silos that existed between the existing systems. Data that had never been accessible was now available to those software applications, often for the first time. New reporting was available, supply chain accuracy started to approach 100% and supply rooms were stocked as needed, when needed, with virtually zero outages and zero overfilled conditions.

The new system made the legacy software systems 100% compatible for the use cases implemented. Even when clinical systems or data centers went down briefly, the hybrid integration platform kept the communication links up and running with reliable delivery of transactions and service requests. Within days of being implemented, staff noticed a huge difference in supply room accuracy. Outages and system errors dropped to virtually zero, and the need for human intervention was minimized, saving countless hours of support time. Ultimately, this allowed health care providers to focus on providing care, and supply chain staff to work proactively on future initiatives, rather than problem resolution.

The solution and various health authority teams involved produced measurable positive effects for stakeholders across Fraser Health (FHA), Vancouver Island Health (VIHA) and PHSA. At the provincial health level,



staff were no longer reacting to frustrating blockages of supply chain requirements. They are now able to ship 25% more supplies throughout the system while maintaining the same shipping costs, resulting in a cost-effective and accurate distribution of required supplies by location. For Island Health, the changes had the most impact, as they were previously unable to connect two of their new hospitals to the existing supply chain.

The new hybrid integration platform solved this issue by connecting five systems directly to each other, allowing them to work in real-time. A wonderful side benefit was the near elimination of manual purchase orders, thus enabling staff to dedicate their energy to clinical care. The cost of the hybrid integration implementation was completed for approximately 20% of a Big Bang system project and the solution was completed in 16 weeks. The system currently handles 100 purchase orders, 900 line items and 76,000 messages a day with less than 0.1% of items ordered requiring manual intervention.

Today, expansions to other hospitals and health authorities are underway, including Vancouver Coastal health (VCH) and in near future, Interior Health Authority (IHA). Each of these use different clinical systems, however, that is not a problem for the Avato Hybrid Integration Platform. Already, any island health facility at VIHA can choose to order supplies from PHSA, which are cost-effectively sourced from warehouses at Fraser Health. They simply choose PHSA as the vendor in their Meditech and begin reaping the benefits of provincial-scale centralized attainment with PHSA's new "just-in-time" supply chain implementation.



# AVATO

For more information, contact Avato at [info@avato.co](mailto:info@avato.co)  
Follow us on LinkedIn and Twitter at @AvatoSystems

<https://avato.co>

## Vancouver

**MNP Tower**  
604-600-7715

1021 West Hastings Street, 9th Floor  
Vancouver, BC, Canada V6E 0C3

## Victoria

**The Atrium**  
250-655-5203

301-1321 Blanshard Street  
Victoria, BC, Canada V8W 0B6