



GENOLIER
INNOVATION
HUB

Genolier Innovation Hub

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WORKSHOP HIGHLIGHTS

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Introduction

Genolier Innovation Hub (GIH) invited its partners and stakeholders to join a workshop dedicated to the design of the Operating Room (OR). The interactive session was moderated by six leaders and was designed to elicit debate and participation from our partners and community of experts. Through collective intelligence and co-development, a user-designed, ergonomic, multi-purpose, highly connective, and innovative OR can be successfully built. This highly collaborative get-together of experts in the field yielded great results, with user feedback to build highly innovative OR that is not only functional but also welcoming. Thanks to everyone's contributions, the GIH continues to grow as a hub for health innovation.



Event Logistics and Facilitators

Prior to the event, we created four distinct workshop groups covering the following themes:

- Concept & Layout
- Economic Model & Pricing
- Optimization of Technological Services
- Training & Clinical Collaboration

During the event, we welcomed eighty-five participants from the medtech, surgical, architecture and educational sectors. Each person was assigned to one of the four groups. The six moderators each covered one of the four groups and were joined by four guides who acted as scribes and group leaders. Each group rotated around the four themed workshops to contribute to each theme of discussion.

Moderators			Guides	
				
Antoine Hubert	Anna Gräbner	Stanley Hautdidier	Isabelle Magnin	Matthieu Moreau
				
Jacques Bernier	Aurélie Meynet	Willem Meter	Marcus Orr	Elodie Metra

Guest of Honor



Jacques Marescaux

Professor Jacques Marescaux is a world-renowned surgeon and the founder of IRCAD (Institute of Research Against Cancer of the Digestive System), a leading medical research institute in the field of minimally invasive surgery.

Under the leadership of Professor Marescaux, IRCAD has become a global center for innovation in medical technology and advanced surgical training, focusing on cutting-edge techniques for minimally invasive and robotic surgery.

Professor Jacques Marescaux is widely recognized for his pioneering contributions to laparoscopic surgery and his role in developing new surgical technologies that are transforming patient care worldwide.

In 2001, Professor Marescaux gained international attention for performing the groundbreaking "Lindbergh Operation," the first laparoscopic-assisted remote surgery, demonstrating the potential of telesurgery for future medical procedures.



Theme 1 – Concept & Layout

Moderated by Antoine Hubert, *delegate of the board AEVIS VICTORIA* and Anna Gräbner, *CEO Genolier Innovation Hub*

1. Maximizing Natural Light

Participants emphasized the importance of preserving natural light throughout the space. Key takeaways include:

- The patio was deemed unnecessary; instead, maintaining a **glass ceiling** could provide ample natural light from above.
- A **glass floor** was also suggested to allow light to flow through to the lower levels, enhancing brightness across the facility.
- Eliminating walls obstructing natural light around the OR or incorporating **glass walls** could create a unique and inviting atmosphere while preserving the openness of the space.

2. Optimizing Space Utilization

The proposal to merge the **state-of-the-art OR** with the **OR of the future** was widely supported. This integration would allow for a **larger, multifunctional operating block**, aligning with the vision of innovation and flexibility.

3. Reevaluating the Need for a Small Auditorium

There were significant discussions around the usefulness of a small 20-30 seat auditorium:

- Surgeons strongly favored **hands-on experiences** within the operating room itself, prioritizing direct interaction with tools and technology over observing from a separate space.
- For theoretical learning, it was suggested to use the **main GIH auditorium** or a **remote plenary meeting room** connected to the OR, ensuring seamless integration of theory and practice.

4. Creating a Highly Modular and Flexible OR

To accommodate diverse types of surgical procedures, the OR must offer:

- **Modular designs** with equipment mounted on **ceiling rails**, allowing for easy repositioning and customization.
- Potential **floor storage solutions** to enhance ergonomic fluidity and facilitate movement.

5. Defining Operational Flows

Clear operational flows were deemed essential to maximize efficiency:

- If the OR were to accommodate patients, there was debate on whether recovery rooms should be integrated into the GIH or remain within the clinical facilities of the Clinique de Genolier.

6. Leveraging Advanced Visual Technologies

The importance of cutting-edge visual tools was underscored:

- High-quality **LED screens** are crucial for providing surgeons with detailed, zoomable views and varying visual perspectives.

7. Innovative Design Features

Several unique architectural ideas were proposed to enhance functionality and observation:

- The creation of a **glass dome** around the OR, allowing visibility from multiple angles and facilitating unique observational experiences.
- A **gallery-like setup** for external observers, offering filmed projections and corridors surrounding the OR for increased accessibility and engagement.

8. Differentiation of Key Functional Spaces

Participants emphasized the need to clearly define and differentiate between essential spaces to optimize functionality and usability:



- **Storage Room:** A dedicated space for storing equipment not in use, ensuring an organized and clutter-free environment.
- **Showroom:** A prominent area for **year-round international visibility**, showcasing state-of-the-art equipment when not deployed in the OR. This space aims to reinforce the innovative positioning of the GIH on a global scale.
- **Debrief Room:** A meeting area for post-training discussions, which could be easily accommodated in a **GIH meeting room** or the **OR cafeteria**, depending on the session's requirements.

Theme 2 – Economic Model & Pricing

Moderated by Stanley Hautdidier, General Director - Clinique de Genolier, General Manager Vaud - Swiss Medical Network

1. Pricing Models and Rental Options

To ensure accessibility and value, the following pricing strategies were discussed:

- **Flexible Pricing Models:**
 - **Group packages:** Bundled pricing combining training sessions with auditorium access for events.
 - **Pay-per-visit:** Tailored participation fees for industries based on usage.
 - **Modular pricing:** "Pay-per-use" options to match user needs and budgets.
- **Rental Terms:**
 - Minimum rental period of **one day** for spaces such as operating rooms (OR), offices, or dry labs.
 - Flexibility to rent spaces for longer durations (**weekly or monthly**) to cater to diverse needs.
 - Upselling opportunities during **Key Opinion Leader (KOL) events** to maximize engagement and value.

2. Holistic & Customized Approach

Participants emphasized the need for a comprehensive and tailored service offering to enhance client satisfaction:

- **All-Inclusive Services:**
 - Integration of **regulatory and compliance** support to ensure smooth operations.
 - **Personalized services** to cater to the specific needs of participants and industries.
 - A **unified approach** that includes all aspects of event and training management.

3. Training and Technology Demonstrations

The OR's training and demonstration capabilities were highlighted as crucial for clients:

- **Hands-On Training in Dry Labs:**
 - Customizable formats (1-day or half-day sessions) for practical, skill-based learning.
 - Opportunities for doctors and trainees to practice with **advanced tools and robotics**.
- **Technology Showcasing:**
 - Host launch events to unveil and demonstrate cutting-edge medical equipment.
 - Realistic conditions for customers to test innovative technologies.
- **Added Value for Participants:**
 - Deliver **"take-home messages"** through recorded video sessions for surgeons.
 - Focus on operating room (OR) **workflows** to improve efficiency and turnaround times.
 - **Unique Selling Proposition (USP):** Simulated real-patient environments for immersive, practical training.



4. Trends and Objectives in Clinical Training

Emerging trends in training reflect a need for efficiency, engagement, and real-world relevance:

- **Training Trends:**
 - Focus on **efficiency** & reduce time and costs while delivering an impactful **“WOW” effect**.
 - Simulate **real-life conditions** with live surgeries, direct expert access, and experimental setups.
- **Key Considerations:**
 - Provide direct, engaging, and impactful learning **experiences**.
 - Ensure **flexibility and accessibility** to attract both local and international participants.

5. Strategic Value Proposition

To maximize the appeal and success of the OR, several strategic initiatives were identified:

- **Optimized Pricing:** Offer flexible and bundled pricing options tailored to client needs.
- **Return on Investment (ROI):** Demonstrate tangible value to clients through successful training events.
- **Hybrid Event Formats:** Combine on-site training with online broadcasts to scale participation.
- **Scalability:** Enable multi-event models to enhance long-term value propositions.

6. Measuring Success

Metrics for evaluating the success and impact of the training programs include:

- **Branding Opportunities:** Leverage operating rooms and training spaces as platforms for brand visibility.
- **Exclusivity:** Avoid conflicts by ensuring competitors do not participate simultaneously.
- **Impact Assessment:** Use customer feedback, ROI metrics, and long-term partnerships as key indicators of success.

Theme 3 – Optimization of Technological Services

Moderated by Willem Meter, IT & Tech Genolier Innovation Hub

1. Technology and Workflow Optimization

To enhance OR functionality and efficiency, participants highlighted key areas of focus:

- **Error Reduction:**
 - Integrate AI systems to minimize medical errors (e.g., wrong-side surgery).
- **Adaptable OR Setups:**
 - Introduce plug-and-play modularity to save time and improve efficiency.
 - Utilize projected floor guides for optimized equipment placement tailored to procedure types.
- **Hygiene and Flexibility:**
 - Use antibacterial glass walls and ceiling rails to simplify setup changes.

2. IT Infrastructure and Data Solutions

An effective IT framework is essential for seamless operations in the OR:

- **Data Management:**
 - Favor on-premises solutions for system interconnectivity and real-time access to patient data.
 - Build a comprehensive data repository including video, audio, machine logs, and patient records.
- **Hybrid Architecture:**
 - Combine on-site and cloud-based systems to balance cost, security, and availability.
- **Sterile Workstations:**
 - Provide sterile, usable workstations for medical professionals.

3. Audio-Visual Integration and Educational Tools

To support training, education, and transparency, the OR requires advanced AV capabilities:



- **Broadcast Standards:**
 - Deliver high-quality visuals for various formats, from 4K broadcasts to low-bandwidth mobile streams.
- **Multi-Feed Systems:**
 - Capture visuals from multiple angles, including patient vitals and procedural details.
- **Virtual Reality (VR) and Stereoscopy:**
 - Employ VR imaging and stereoscopic visuals for enhanced learning experiences.
- **Archival Systems:**
 - Create multi-camera, multi-audio archives for procedures to support training and reviews.

4. Strategic Value Proposition for Training

To establish the OR as a global leader in surgical innovation:

- **Training Trends:**
 - Incorporate VR, gamification, and AI-driven systems to simulate real-world surgical conditions.
 - Enhance surgeon and trainee engagement with interactive feedback mechanisms (e.g. via audio questions, chat moderation, and real-time feedback to surgeons).
- **Technology Demonstrations:**
 - Host events to debut and test cutting-edge medical equipment in realistic conditions.
- **Collaboration:**
 - Facilitate partnerships between clinicians and industry to refine workflows and technologies.

Theme 4 – Training & Clinical Collaboration

Moderated by Jacques Bernier, Chief Science Officer Genolier Innovation Hub and Aurélie Meynet, Operating Director Clinique de Genolier

1. Standardized Training Protocols

To ensure consistency and effectiveness in medical and paramedical training, participants discussed the importance of adaptable and standardized processes:

- **Protocols for Training and Coaching:**
 - Establish and continually update training protocols to align with the latest advancements in surgery and technology.
 - Leverage rapid feedback loops to optimize training outcomes and improve adoption of best practices.

2. Interdisciplinary Collaboration

Promoting clear communication and teamwork across various stakeholders is critical for improved outcomes:

- **Training for Collaboration:**
 - Design interdisciplinary training programs that enhance collaboration between doctors, paramedical teams, and manufacturers.
 - Focus on verbal and written communication for seamless coordination during procedures.
- **Teamwork Frameworks:**
 - Strengthen teamwork by incorporating collaborative simulation sessions and joint evaluations.

3. Needs Assessment for Product Development and Demonstration

Efforts should focus on facilitating innovation through collaboration and real-world testing environments:

- **Clinical and Operational Feedback:**
 - Enable clinicians to communicate challenges and needs to manufacturers for tailored product development.



- Conduct regular benchmarking of tools and techniques against cutting-edge innovations.
- **Demonstration Capabilities:**
 - Provide realistic testing environments with technologies like VR, simulators, and 3D-printed models to evaluate new products under controlled conditions.

4. Agile Structures for Collaboration

Creating adaptable frameworks allows stakeholders to stay aligned with future demands:

- **Forward-Thinking Strategies:**
 - Foster agile structures that encourage innovation, adaptability, and collaboration.
 - Equip teams to anticipate and meet future needs in a rapidly evolving healthcare environment.

5. Communication Channels

Facilitating strong communication within this ecosystem is key to success:

- **Open Dialogue:**
 - Use multiple platforms, including meetings, digital forums, and real-time feedback mechanisms, to foster collaboration.
- **Networking Opportunities:**
 - Encourage direct interaction between clinical and industrial teams through collaborative workshops and reverse pitch challenges.

6. Training and Technology Demonstrations

- **Immersive Training Programs:**
 - Focus on direct, engaging, and impactful learning through real-life simulations, live surgeries, and cutting-edge tools.
- **Added Value for Participants:**
 - Use video recordings, performance analytics, and workflow evaluations to enhance learning and OR efficiency.

Conclusion

The workshop on the design of the operating room brought together invaluable contributions from a diverse range of expertise. By combining collective intelligence and collaborative thinking, practical and innovative solutions were identified to address the current and future challenges of surgical environments.

- **Concept & Layout:**

Key elements included maximizing natural light through glass ceilings and floors, optimizing space by merging OR functions for greater flexibility, and ensuring modular designs for various surgical needs. A highly adaptable structure was prioritized, with ceiling-mounted equipment rails, antibacterial surfaces, and efficient operational flows. Advanced visual technologies, such as high-resolution LED screens and a potential gallery-like setup for observation, were highlighted as critical. Differentiating spaces like storage rooms, showrooms, and debrief areas was also emphasized to enhance functionality, international visibility, and post-training discussions.



- **Economic Model & Pricing:**

Flexible models, including pay-per-use and group packages, were proposed, alongside minimum rental periods to maximize value. Customization and comprehensive services, such as regulatory support and event management, were seen as crucial to client satisfaction. The OR was positioned as a hub for hands-on training and technology demonstrations, offering real-world conditions for equipment testing and skills development. Emerging trends pointed to immersive experiences with reduced costs, hybrid event formats, and tangible ROI as the cornerstone of success. Metrics like customer feedback and long-term partnerships were identified for evaluating impact.

- **Optimization of Technological Services:**

AI systems were proposed to reduce errors, while modular setups with projected floor guides were suggested to enhance adaptability and save time. A hybrid IT architecture combining on-site and cloud solutions was recommended for robust data management and real-time access. Cutting-edge AV systems, including multi-feed visuals, VR, and stereoscopy, were proposed for education and training. The OR's strategic value lies in its ability to showcase innovations, foster collaborations, and simulate real-world surgical scenarios, establishing itself as a leader in surgical innovation.

- **Training & Clinical Collaboration:**

Standardized, adaptive training protocols with rapid feedback loops were recommended to ensure effectiveness. Interdisciplinary training programs and collaborative simulations were emphasized to strengthen communication and teamwork. Product development and demonstration initiatives were encouraged through realistic testing environments like VR and 3D printing. Agile structures were proposed to align with the evolving healthcare landscape, supported by open communication channels, interactive workshops, and immersive training experiences. The focus remained on delivering value through cutting-edge tools, simulations, and performance analytics.

These insights will serve as a solid foundation for the next stages of development and contribute to the Genolier Innovation Hub's ambition to foster innovation and collaboration within the healthcare sector.

Genolier Innovation Hub extends its heartfelt thanks to all participants for dedicating their time, sharing their insights, and contributing their expertise to the co-creation of the operating room.

Antoine Hubert

Delegate of the board

AEVIS VICTORIA

Anna Gräbner

CEO

Genolier Innovation Hub