

# Commercialising the ISS



# Our approach

## Step 1

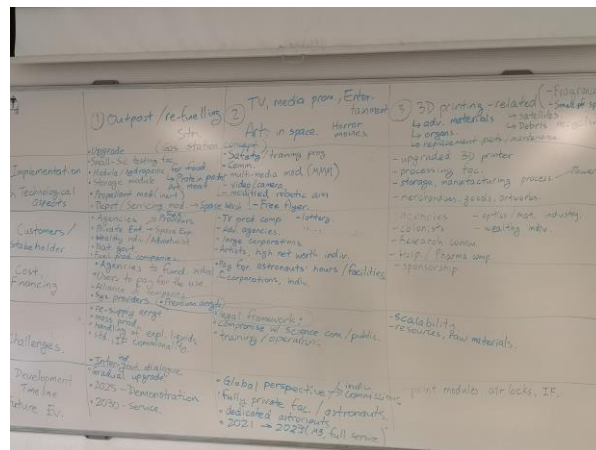
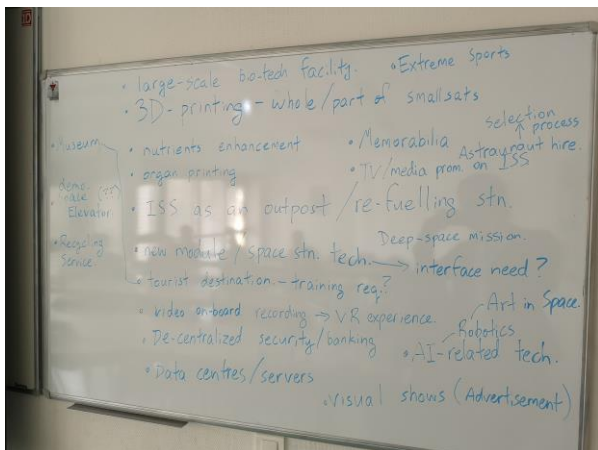
## Idea generation

## Step 2

## Idea pooling

## Step 3

## Idea development



# Three main concepts

**ISS → Servicing,  
Refueling,  
Resupplying**

**TV / media /  
entertainment,  
Art in space**

**3D Manufacturing**

# In depth analysis of Entertainment concept

## Implementation

- Safety considerations/policies
- Media person training
- Communications HD / data bandwidth
- Separate Multi-Media Module (**MMM**)
- Video / cameras installations
- Robotic arm / free flyers (Spheres / Cimon) for filming/assistance

## Future evolution

- Fully private facilities / astronauts
- Global perspective -> indiv. / commissions
- Phase 1 = 2020, Phase 2 = MMM / full service ~2023-25

## Customer and Financing

### **Customers:**

- Media corporations
- Large corporations
- Advertisement agencies
- Artists, high network individuals

### **Financing:**

- Pay for astronauts' hours / facilities
- Media corporations / individuals

## Challenges

- Updated legal framework
- Push-back from institutional / science / taxpayer, compromise



# Thank you!

	Outpost / refueling -resupply station	TV / media / entertainment Art in space	Advanced manufacturing <ul style="list-style-type: none"> <li>Advanced materials</li> <li>Organs</li> <li>Replacement parts / maintenance</li> <li>Satellites</li> <li>Debris recycling</li> <li>3D food printing</li> <li>Modules printing</li> <li>Fragrances / smells</li> </ul>
Implementation & technological aspects	<ul style="list-style-type: none"> <li>Small-scale testing facility on-orbit servicing</li> <li>Hydroponic food harvesting module</li> <li>Storage room / module</li> <li>Microbes to grow protein-production</li> <li>Cultured meat</li> <li>Car-wash / space-wash / mending shields spacecrafts</li> <li>Depot / servicing</li> </ul>	<ul style="list-style-type: none"> <li>Safety</li> <li>Media training</li> <li>Communications HD / data bandwidth</li> <li>Separate multi-media module (MMM)</li> <li>Video / camera's</li> <li>Robotic arm / free flyers (Spheres / Cimon / ...)</li> <li>Lottery</li> </ul>	<ul style="list-style-type: none"> <li>Upgrade of 3D printers</li> <li>Processing / supporting facilities</li> <li>Storage / transportation of materials / Supply chain</li> <li>Merchandises, goods, artworks</li> </ul>
Customers / stakeholders	<ul style="list-style-type: none"> <li>Agencies</li> <li>Commercial companies</li> <li>Wealthy individuals</li> <li>Food companies or other providers</li> <li>Countries / governments</li> <li>Fuel production companies</li> </ul>	<ul style="list-style-type: none"> <li>Media corporations</li> <li>Large corporations</li> <li>Advertisement agencies</li> <li>Artists, high network individuals</li> </ul>	<ul style="list-style-type: none"> <li>Medical companies / hospitals</li> <li>Agencies</li> <li>Future space colonists</li> <li>Research communities</li> <li>Industries for optical fibres, materials, ...</li> <li>Wealthy individuals</li> </ul>
Cost / financing / revenue generation	<ul style="list-style-type: none"> <li>Agencies to fund initial</li> <li>Users to pay for the use</li> <li>Consortium / alliance of companies</li> <li>System providers</li> <li>Premium arrangements</li> </ul>	<ul style="list-style-type: none"> <li>Pay for astronauts' hours / facilities</li> <li>Media corporations / individuals</li> </ul>	<ul style="list-style-type: none"> <li>Sponsorship</li> </ul>
Future evolution / roadmap / Development timeline	<ul style="list-style-type: none"> <li>Gradual upgrade of ISS modules / parts</li> <li>Refueling station 1 demonstration 2025 / full capability 2030</li> </ul>	<ul style="list-style-type: none"> <li>Fully private facilities / astronauts</li> <li>Global perspective -&gt; indiv. / commissions</li> <li>Phase 1 = 2020, Phase 2 = MMM / full service -2023-25</li> </ul>	<ul style="list-style-type: none"> <li>Print modules, airlocks</li> </ul>
Challenges	<ul style="list-style-type: none"> <li>Water supply</li> <li>Mass production</li> <li>Handling of fuel / liquids / explosives / combustibles</li> <li>Common interfaces / standardization</li> <li>Inter-government dialogue</li> </ul>	<ul style="list-style-type: none"> <li>Updated legal framework</li> <li>Push-back from institutional / science / tax-payer, compromise</li> </ul>	<ul style="list-style-type: none"> <li>Updated legal framework</li> <li>Scalability</li> <li>Resources / raw materials</li> </ul>