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Panel 4

Technology Development Partnerships

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# Observations for Partnership opportunities

- Logic of work:
  - « *Supply* » Chain perspective...





Logic of work:

- ✓ Program driven, complex assets
- ✓ Reliability, safety, compliance
- ✓ Race to operation excellence
- ✓ Meritocratic Supplier selection on pre-defined qualifications, specifications, capabilities and contractual arrangements
- ✓ More closed innovation

**Product development, delivery, operations**

Supply Chain Space

Logic of work:

- ✓ Scientific and discipline driven
- ✓ HQP trained by emulation and or curriculum
- ✓ Infrastructures for basic principles and concepts discovery, and proof of concepts
- ✓ More open Innovation

Basic research

Launch of program

Coming into service

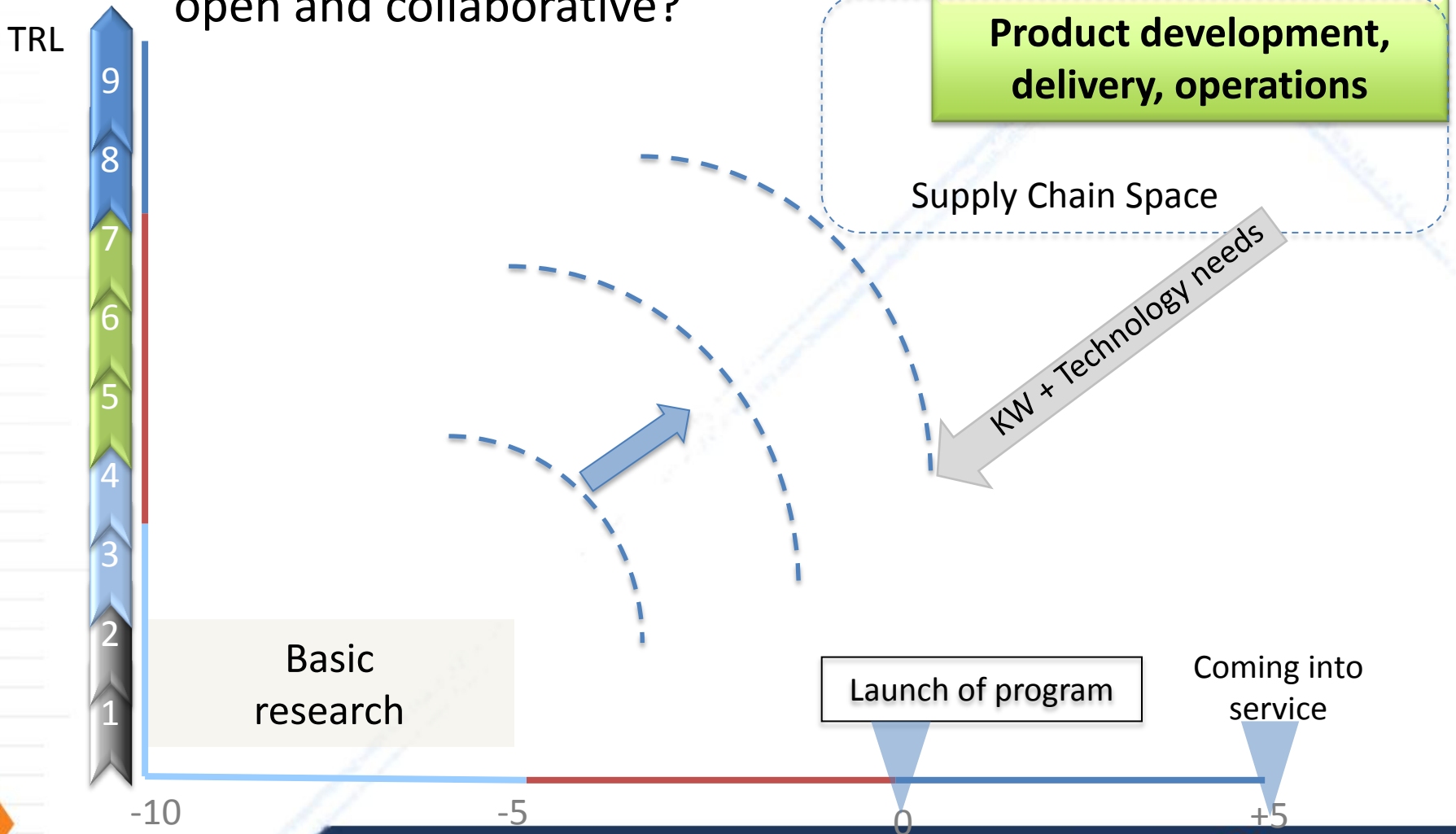
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How to innovate in this process that we want more open and collaborative?





# Reducing the Barriers for Technology Development Partnerships

1. Need for a systemic vision of a **Technology Life Cycle**, from scientific principle discovery, to demo, to product, to in service, to disposal – *Work Chain to organise*
2. Supporting a **logic of work** considering each project/demo on a **continuum** of opportunities for:
  - ✓ Technology development/integration and transfer (products, systems, processes);
  - ✓ Optimization of funding programs;
  - ✓ Building the best partnership with the best teams;
  - ✓ Training of HQP (MSc., PhDs, technicians, operators);






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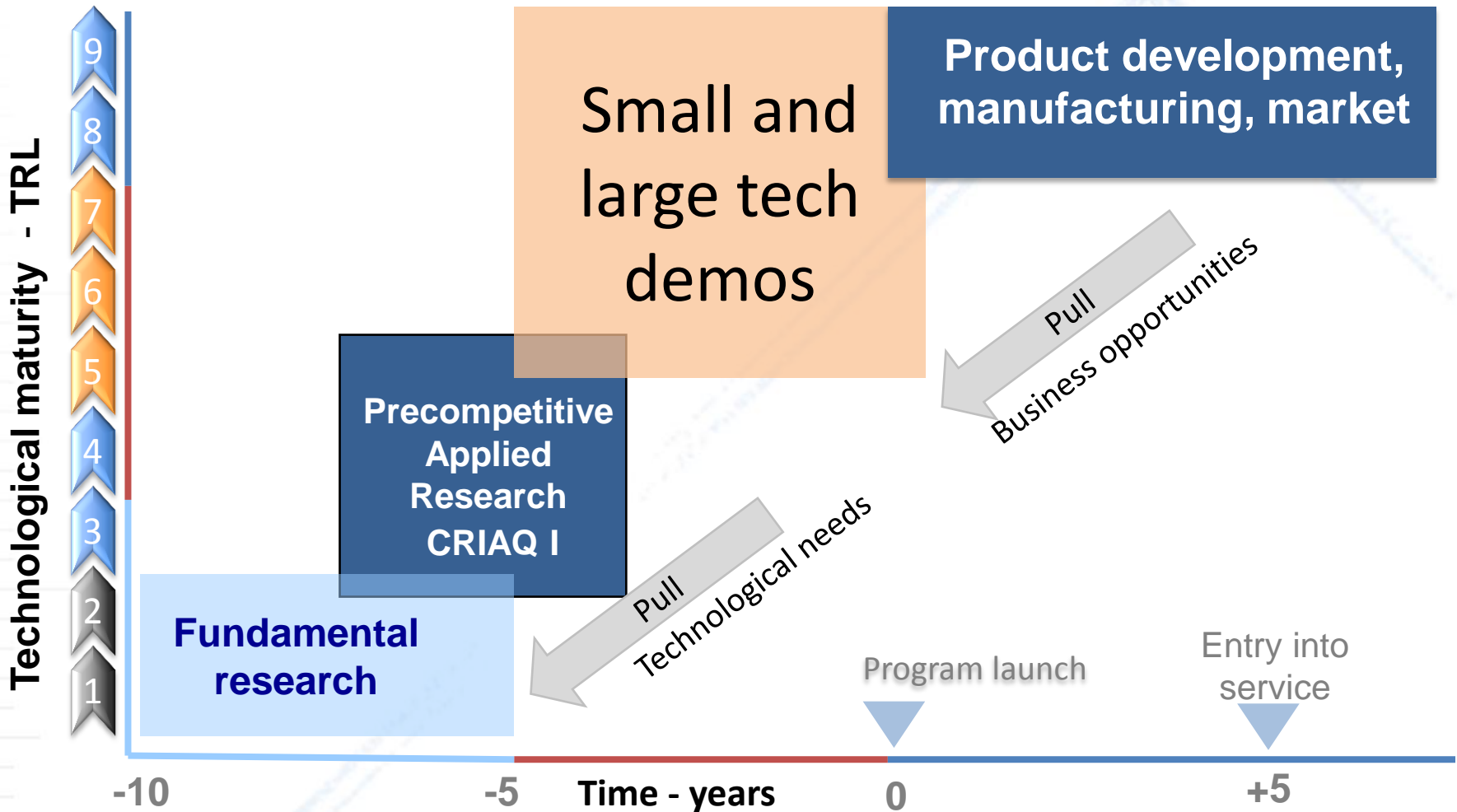
- Logic of work:
  - Migrate from a « *supply* » chain perspective to...
  - ... an innovation chain
- Governance, funding mechanisms and Innovation Intelligence
  - Provide mechanisms and tools to support distributed innovation tasks, facilitate sharing/pooling when necessary (open), and business deals when required (close)
- Supporting continuous Co-creation and Co-development of Technologies and Capabilities (OEM, Integrators, SMEs, Universities and RC)



# TRL-MRL-IRL: Innovation route to supply chain

- Goal: support development of collaborative product-system/manufacturing process projects/demo, by organizing a work chain where the expertise/work is highly specialised and distributed
- Objectives:
  - Nurture maturity for Canadian promising technologies  product, process
  - Work out financial engineering and governance mechanisms for real and solid partnerships
  - Involve more SMEs in technological and IP development
  - Organize a collaborative network of infrastructures involving configurable and adaptable R&D labs and resources









# Added value of an Innovation chain perspective for aerospace

- Integrated approach based on:
  - ✓ Improved co-ordination of the **various entities** involved at **ALL** TRL levels;
  - ✓ More integration in partnerships of manufacturers, key partners and innovative SMEs;
  - ✓ **Science and engineering *maturity***





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**= faster technological maturity,**

leading to **greater industrial maturity**

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- Provide Gvt sense making for improved strategic alignment of R&D policies and programs for **MARKETABLE PRODUCTS & SERVICES**





# Conclusion

1. Need better links between long term procurement strategy (Govt, OEM) and technology development/training portfolio management (national, provincial, clusters, etc.)
2. Sourcing of products and systems is worldwide; so as R&D and tech demo capabilities
3. Collaborative Technology Partnerships are a mean to optimize/organize aerospace Canadian work chain for improved competitiveness

