Collaborative Innovation:

What is "collaborative innovation" and how can it be used to catalyze the development of new technologies to create social impact?

November 2021

AGENDA

1.- The importance of collaboration for innovation

2.- Developing countries' innovation strategy

3.- Chile's innovation ecosystem

The Importance of Collaboration

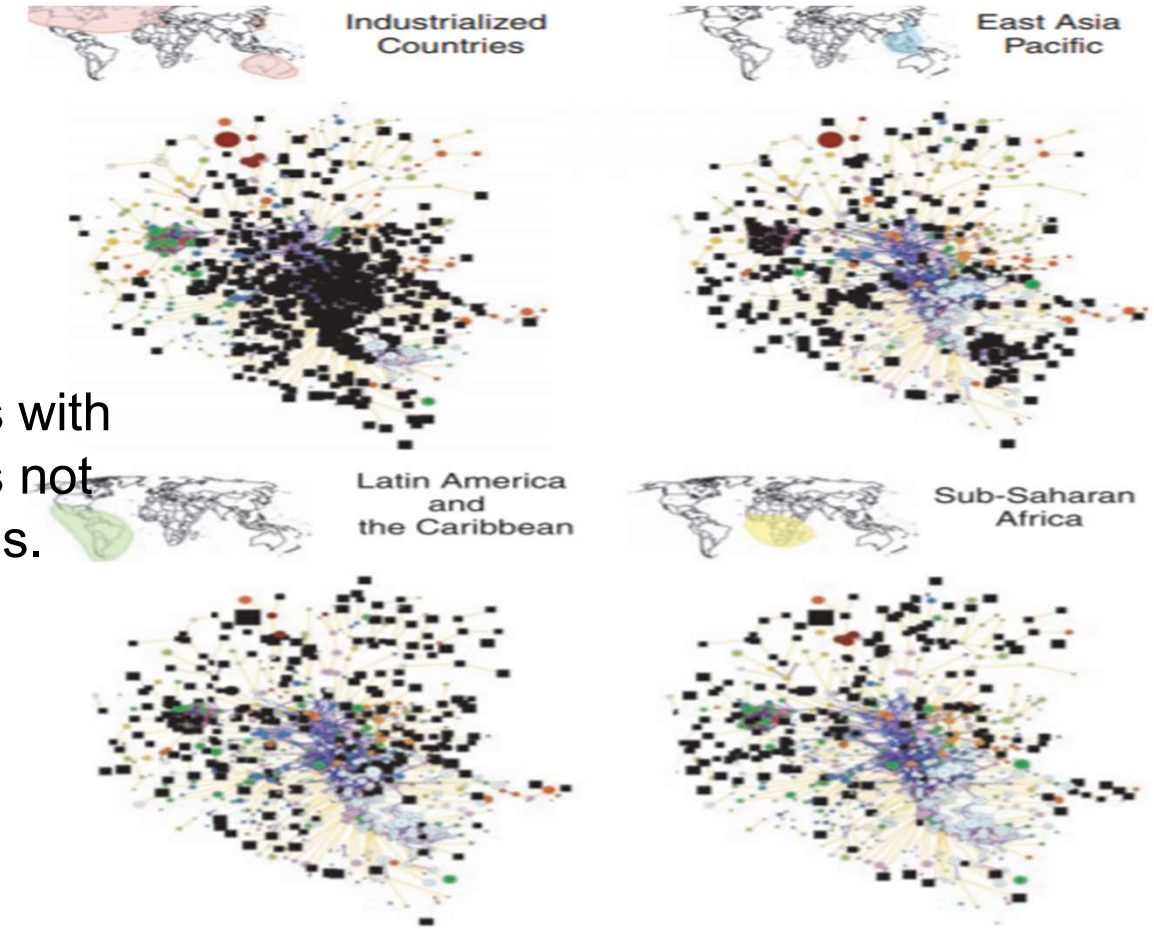
- Innovation needs collaborative networks, because it is a complex process
- Countries more collaborative have more economic complexity, that reflects the amount of knowledge that is embedded in the productive structure of an economy
- When a country tries to become more complex, **it shifts focus from low-value products and low-skilled knowledge to those requiring higher skills**. Rising the income gap and inequality

Hidalgo and Haussmann

Collaboration and networks in developing countries usually is weak

Economic Complexity

We see industrialized countries with industries well connected but is not the case in developing countries.



Success stories: TT as strategy. Newly industralised countries:

Policies are needed to integrate stakeholders in developing countries

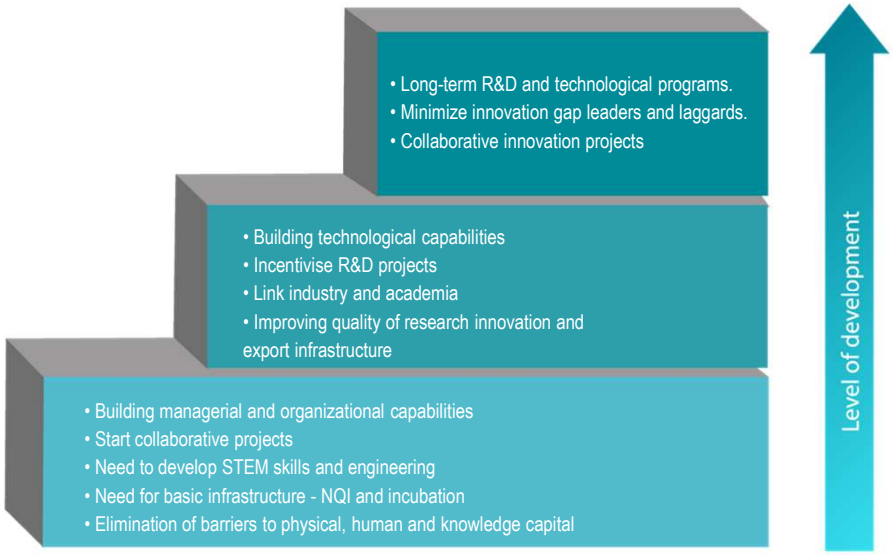
Innovation strategy: Aligning several aspects to generate impact at the local level

Source: World Bank 2017.

Note: NQI = national quality infrastructure; R&D = research and developent.

Developing countries strategy

Developing countries need developed countries to innovate, because they have most of the technology. That explains as well the successful innovation strategy developed by Korea and Singapore that hire foreign technology through turnkey contracts



A global strategy is required

Good regulation on IP and other technological regulations

Articulated and connected ecosystem

Infrastructure among the main factors

Indigenous capabilities

World Bank 2017, The innovation paradox

What did Chile do to foster innovation?

Defined strategic sectors:

Two main aspects to define sectors or areas:

- Competitiveness and market
- Indigenous capabilities

The Chilean Innovation Ecosystem: Two collaborative programs

International center that works with local research entities

Center of excellence attraction

CENTROS CORPORATIVOS

CEMP

ENGIE Lab

Telefónica

EMERSON

Conformed by specialized international entities

Technological Consortiums

Articulating through technological consortium

Conformed by universties and companies (national and international)

- Cellular therapy
- Respiratory and other diseases
- Plant breeding program
- Plant breeding program
- Aquaculture technology on food and fish health
- Wine consortium .

Different collaborative program's approach:

- **Center of excellence**

International center that works with local research entities: research contracts

1) Capabilities not integrated in the center
2) Focus on technological area
3) Governance requirement: NO
4) IP policy: Yes

- **Technological Consortium**

Different entities national and international that are organized to innovate in the country

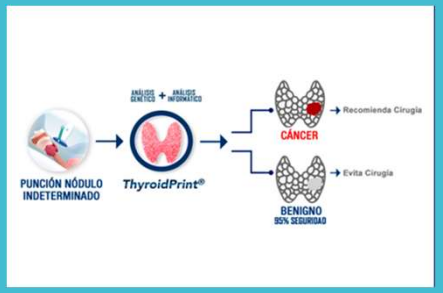
1) National and foreign capabilities are integrated
2) Specific projects in a defined technological areas
3) Governance requirement: Yes
4) IP policy: Yes

…But not every Collaborative Program Works:

Just one program has possitive outcomes:

MAYLEN

GeneproDX



Elements for success: Technological Consortium

Rules for collaboration

1. To have indigenous capabilities and international capabilities (companies+ universities or research centers) integrated in a new association

2. Local direction and management

3. Program with specific research lines and expected results but flexible

4. Strong governance in different levels

5. IP policies and contracts. Local component

Elements for success: indigenous capabilities

The local and international capabilities must be integrated and the Consortium management must have a national focus

Elements for success: research lines

Program with specific research lines and expected results:

- Flexible
- Not open in a specific area
- Needs a close follow up by develpment agencies

Elements for success: Governance with a local view

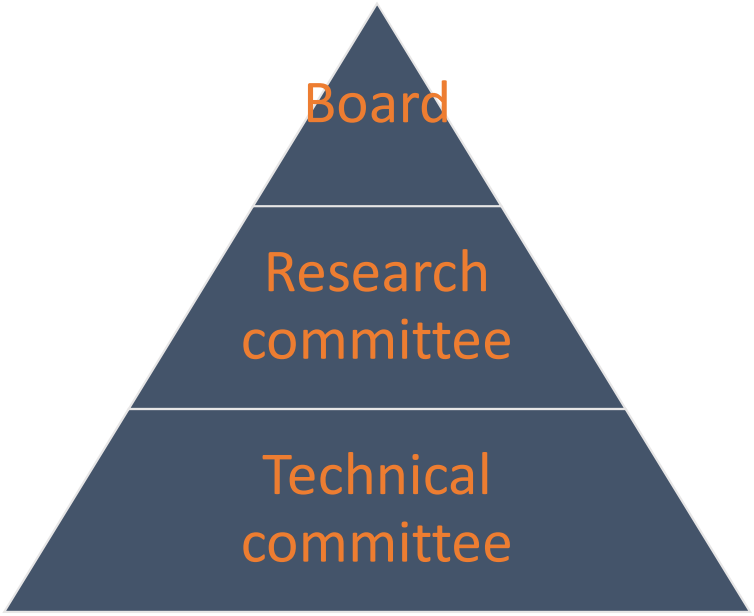
Rules for collaboration

Good governance at different levels:

Board:
Long term view- scientific
Short term view: companies (majority)
Local management

Number not large: 5 or 7

Research committee is strategic and connect board with the technical committee



Elements for success: IP policies

Rules for collaboration

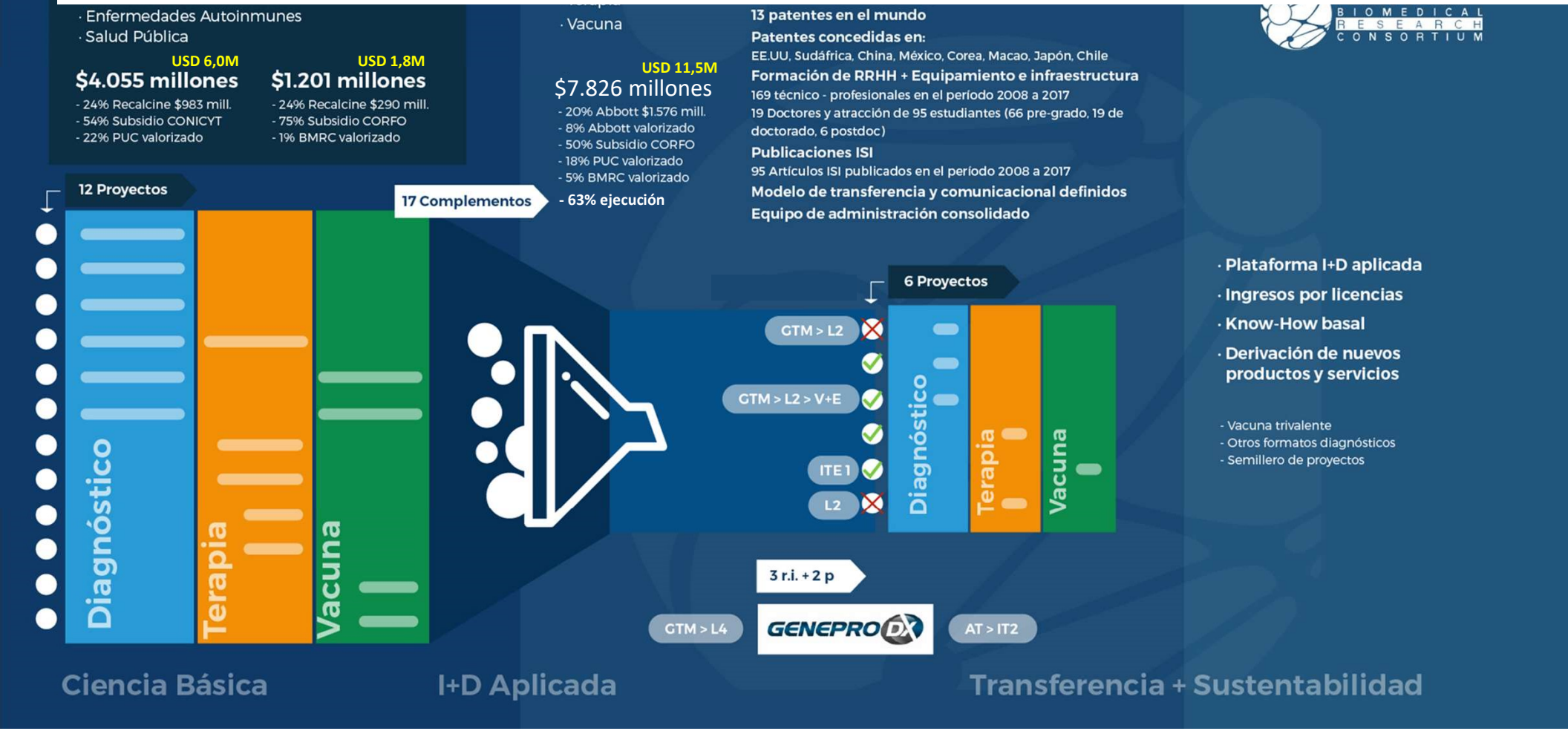
Contracts and IP policies focus on technology transfer, for example:

- If consortium members have previous IP, must be agreed on the possibility to create and exploit a new one an future IP based on the previous one
- To have clear rules for IP ownership and IP commercialization
- And have a business model based on intangible in order to give them economic sustainability

A local development or technology transfer at the local level must be required

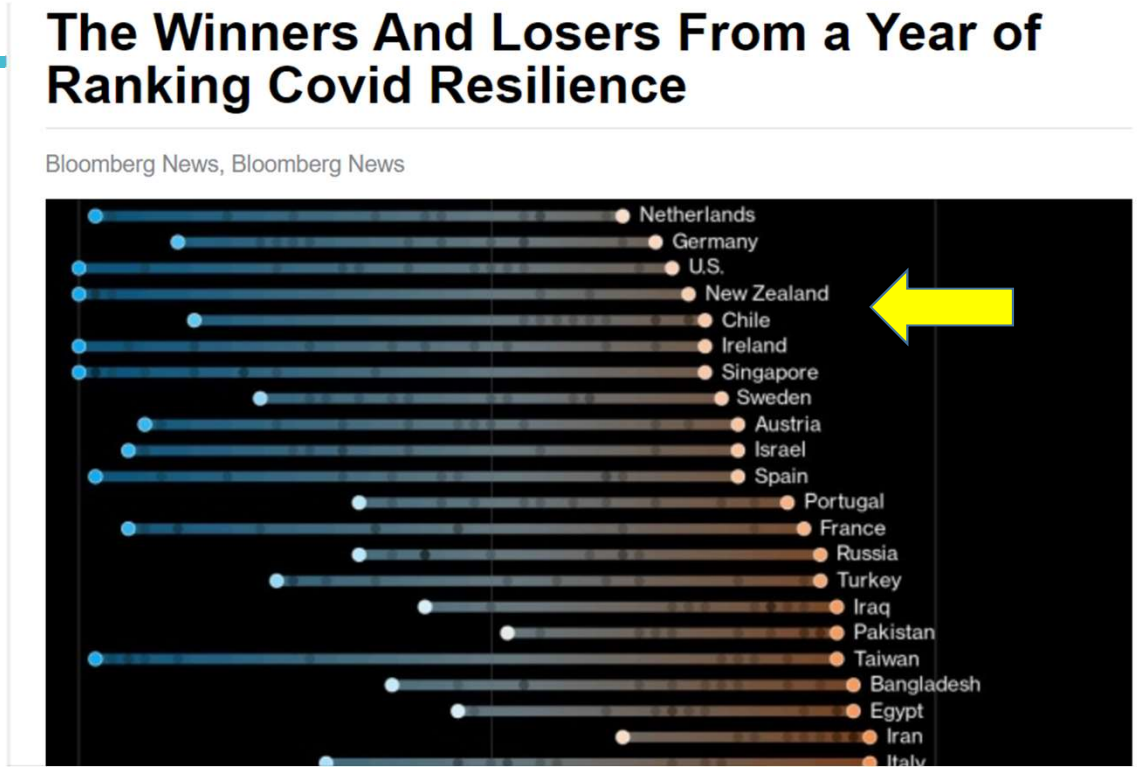
What was the social impact of the technological consortium model?

One of the Consortium was focus on human health: respiratory disease vaccines and created new local capabilities in the area



COVID-19 Response

Due to Chile' experience on respiratory disease vaccines development, was invited to participate in Sinovac Covid Vaccine clinical trials and negotiate enough vaccines for Chile population.

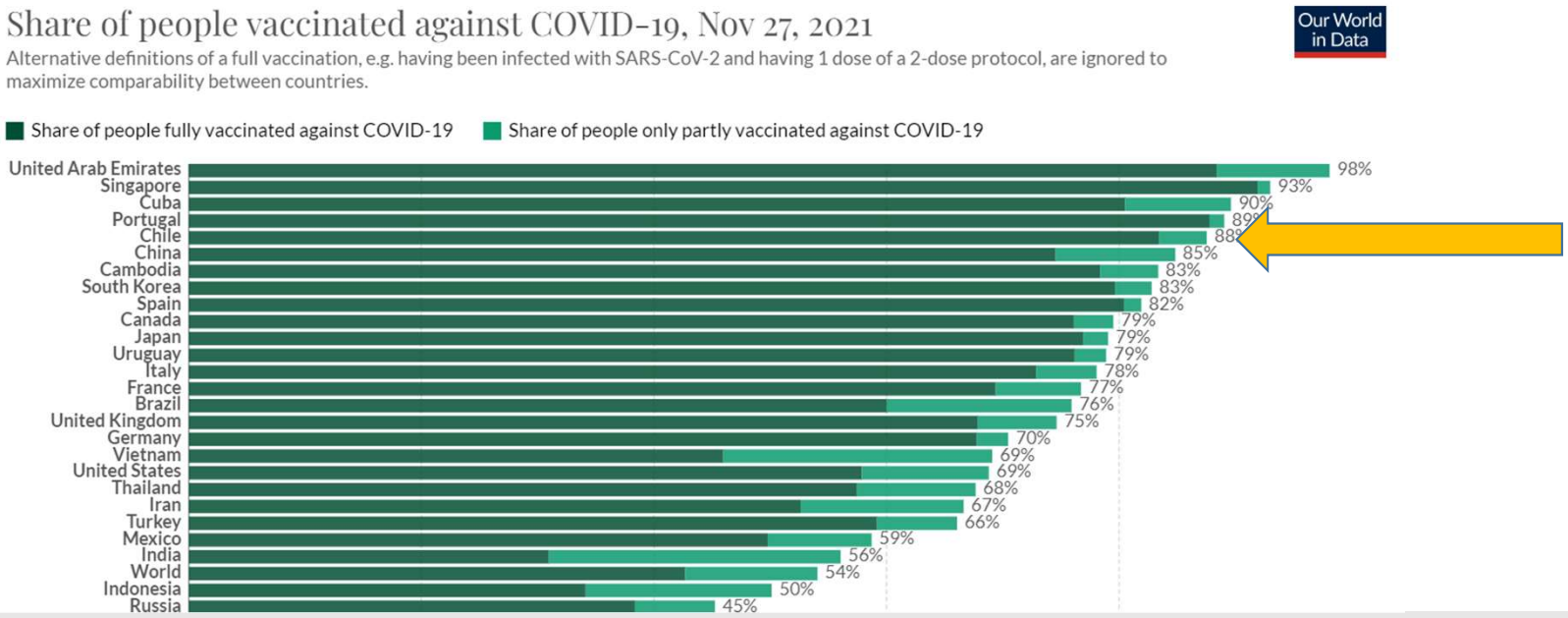


COVID-19 Response

Additionally a new Sinovac manufacturing subsidiary and R& D center will be installed in Chile soon .

Conclusion: Social Impact

Technological Consortium not only produced technical capabilities but also **collaboration capabilities** and these capabilities enable us to face pandemic having a **huge social impact**



Thank you!

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