

Governing science-industry collaborations in the Global South: from networks of power to developmental coalitions

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Outline

- Introduction
- S&T model – historical and contemporary considerations
- Empirics: Trinidad and Tobago
- Networks of Power and Developmental Coalitions
- Case study: Real Time Systems Group
- Significance and Conclusion

la politique vs le politique



Science, productivity and development

- Science and production – dye (Marx), manufacture (List), and invention (Schumpeter)
- S&T institutions underperform in developing countries and linkages are weak – ‘systemic failures’
- Development as the complex process of transforming productive structures, improved labour productivity and transition to higher value added activities
- University-industry collaboration: a number of organizational players in science, industry, political, state and international (politics of development)

Defining innovation

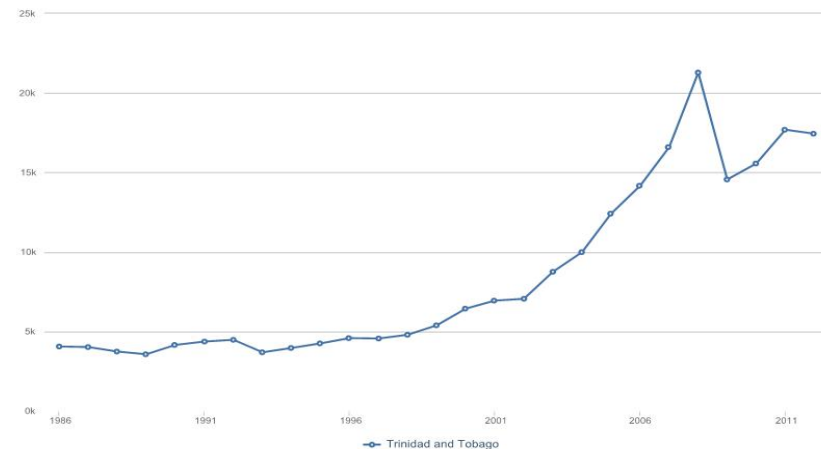
Innovation is an intentional process of generating, acquiring and applying knowledge aimed at producing economic and/or social value. In developing countries, this process typically takes place through the unfolding over time of a wide variety of learning and capability building processes, rather than through the mastery of science and technological knowledge. Innovation is an investment effort in which knowledge, financial capital and other resources including cultural and social capital are deployed over time to create value. Deftly undertaken innovation can lead to the transformation of systems, values and culture as well as the production of new and/or improved products or processes (Marcelle, 2016)

Empirics: Trinidad and Tobago

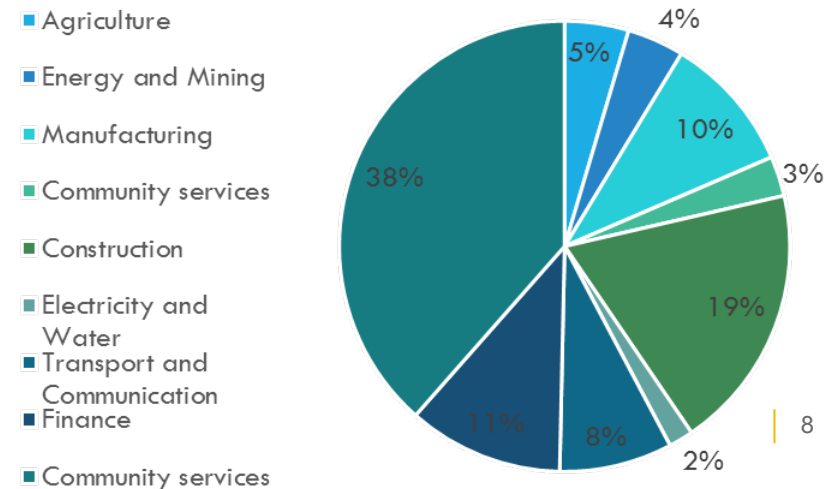


Population (Total)	1,337,439
Year of Independence/Republicanism	1962/1976
GDP per capita	17436.5
Exports of goods & services (% of GDP)	78%
Life expectancy at birth, total (years)	69.8
Political system	Parliamentary
Agriculture (% of GDP)	0.8%
Energy (oil and natural gas)	50%
Services	22%
Manufacturing	8%
Tertiary Education participation rate	≤60%
Unemployment rate	3.5%

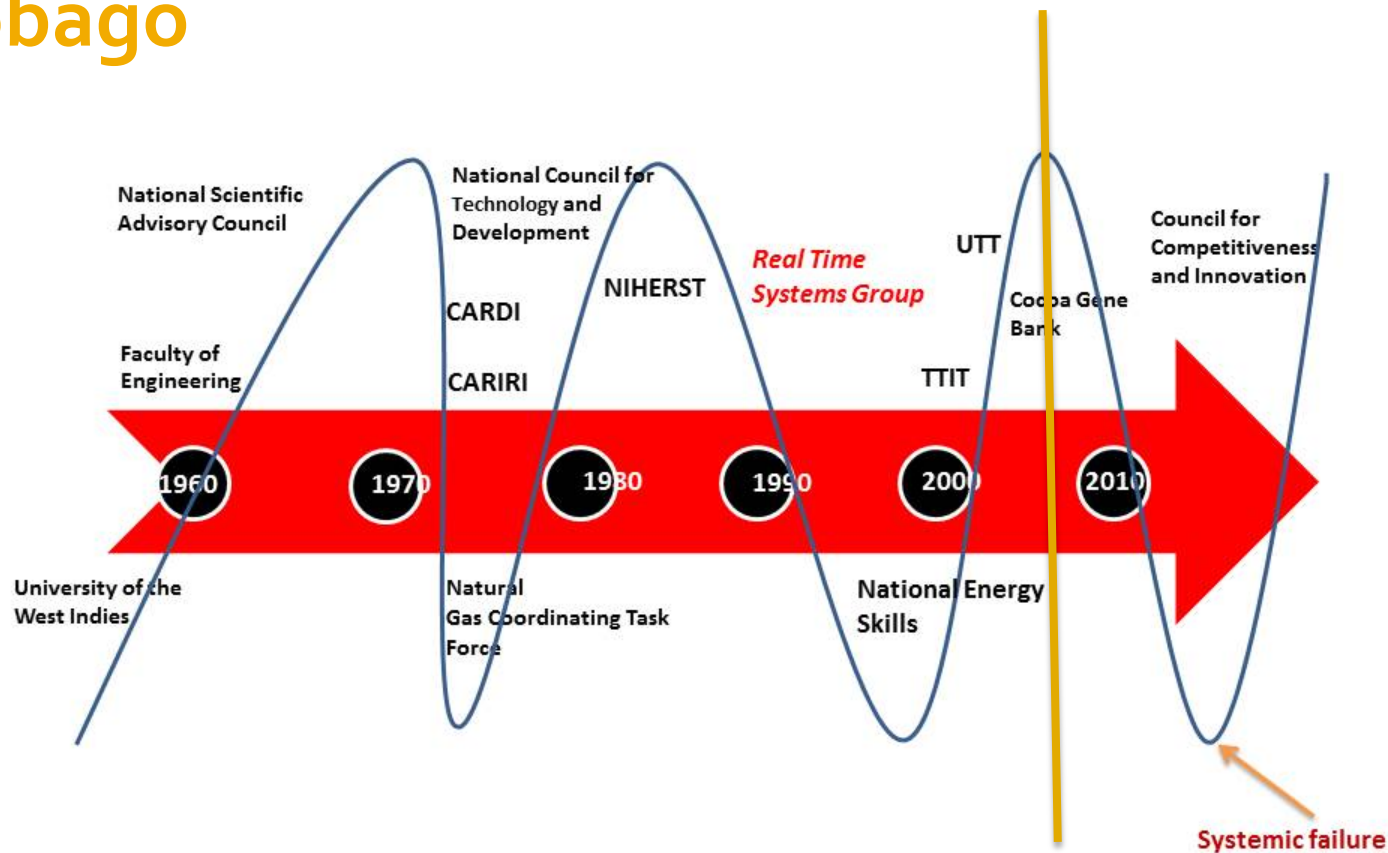
GDP per capita (US\$) (1986-2012)



Employment by Sector



Institutional Pulse in S&T – Trinidad and Tobago



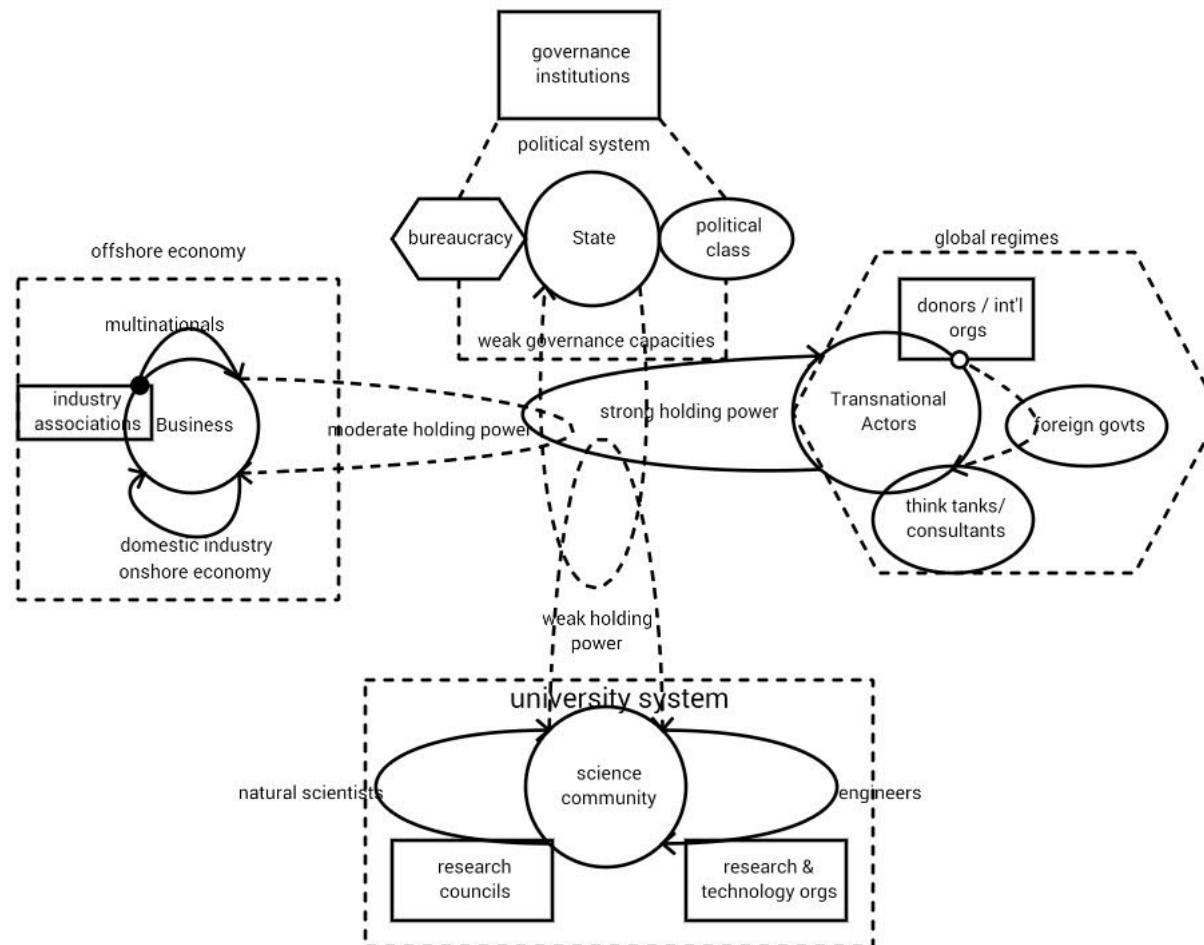
Networks of power

Political settlement: distribution of power and technical capabilities across organisations within a society (Khan 2010, 2013)

'Networks of power' comprise heterogeneous entities, namely science community, donors, government, and industry whose exchanges are primarily informal in nature, and governed by unequal power and capabilities that sometimes enjoy short-lived institutional changes and learning gains, leading to diverse possibilities.

E.g. Thailand, Malaysia, LAC countries, Vietnam, South Sub-Saharan Africa

- Innovation policy making as a social and political process in which benefits are contested – distribution of power, institutional evolution



Case: Real Time Systems Group

- Mid-1980s, led by engineering professor with industry experience at the University
- Tackle industry-relevant problems with industry players
- Funding support from international organization and commitment from state enterprise sector, track record/ performance
- SCADA systems, drill site monitoring (energy); a fraud detection, switch monitoring systems (telecoms); generator, load monitoring systems (electricity); arc furnace power control (steel)
- Inter-organisational conflict and struggles led to early retirement, spin-off – no funding continuity or support from university or government

Conclusion

- Innovation systems do not capture short-lived successes – focus on snapshot “systemic failures”
- Important gains, technological accumulation, institutional advance drawn from historical experience
- Lived realities and political processes matter – discontinuous institutional changes due to political struggles and withdrawal from early support
- Policy support & multilateral engagement – how to sustain efforts and ensure learning spillovers can occur and are institutionalized?
- Coalitional processes help unearth important insights: future coordination, state capacity, lessons for policy; developmental coalitions

Thank you

Questions?