



# **Systems Thinking and Higher Education: Innovation Ecosystem Assessment and Application in the Philippines**

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Future of Higher Education Investments

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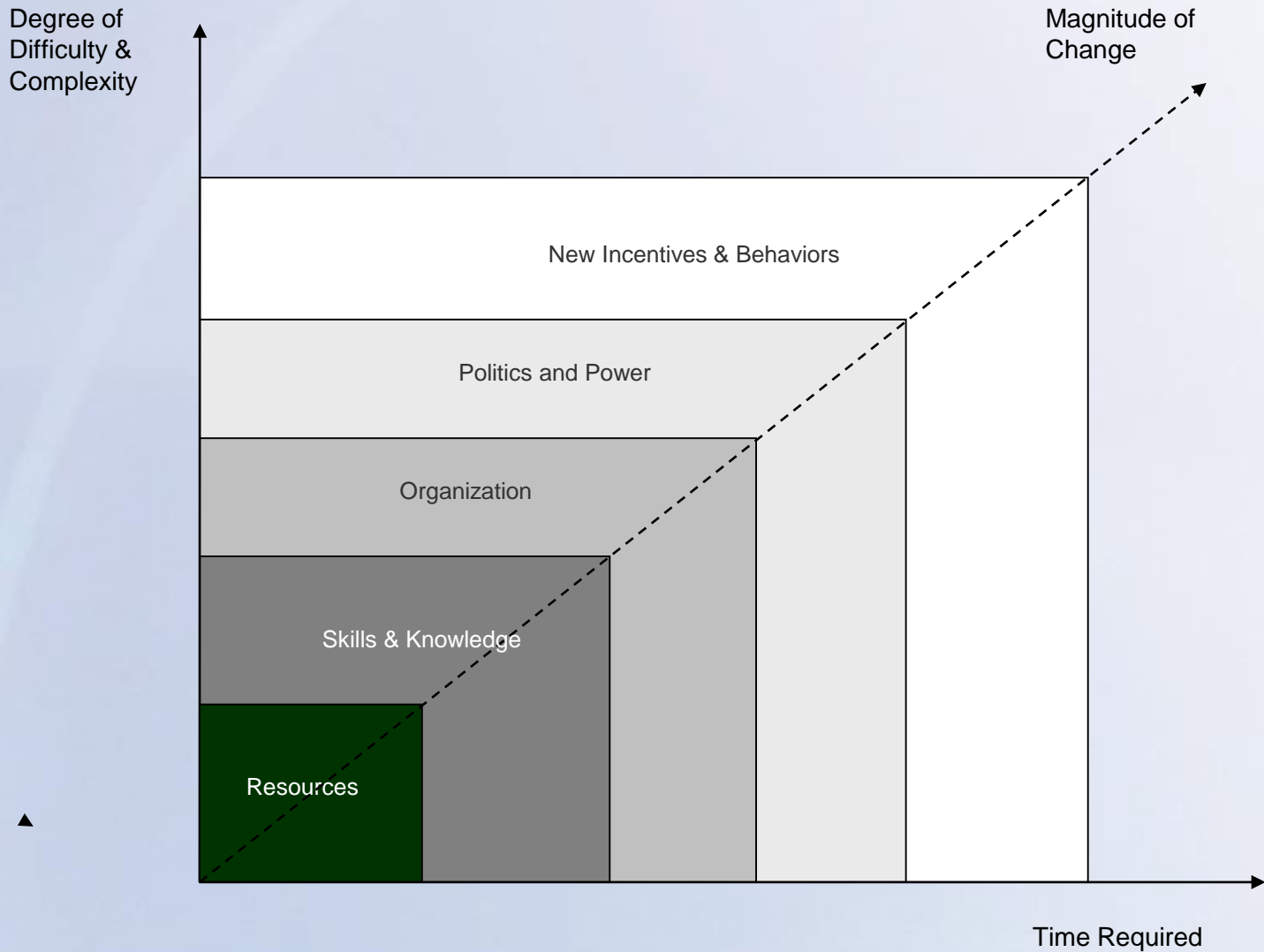
# Systems thinking



A word cloud of systems thinking concepts. The central and largest word is "Interconnectedness" in a bold, dark red font. Other words are arranged around it in various sizes and orientations, including "Adaptation", "Feedback", "Learning", "Sustainability", "Holistic", "Uncertainty", "Unpredictability", and "Emergence".

Adaptation  
Interconnectedness  
Feedback  
Learning  
Sustainability  
Holistic  
Uncertainty  
Unpredictability  
Emergence

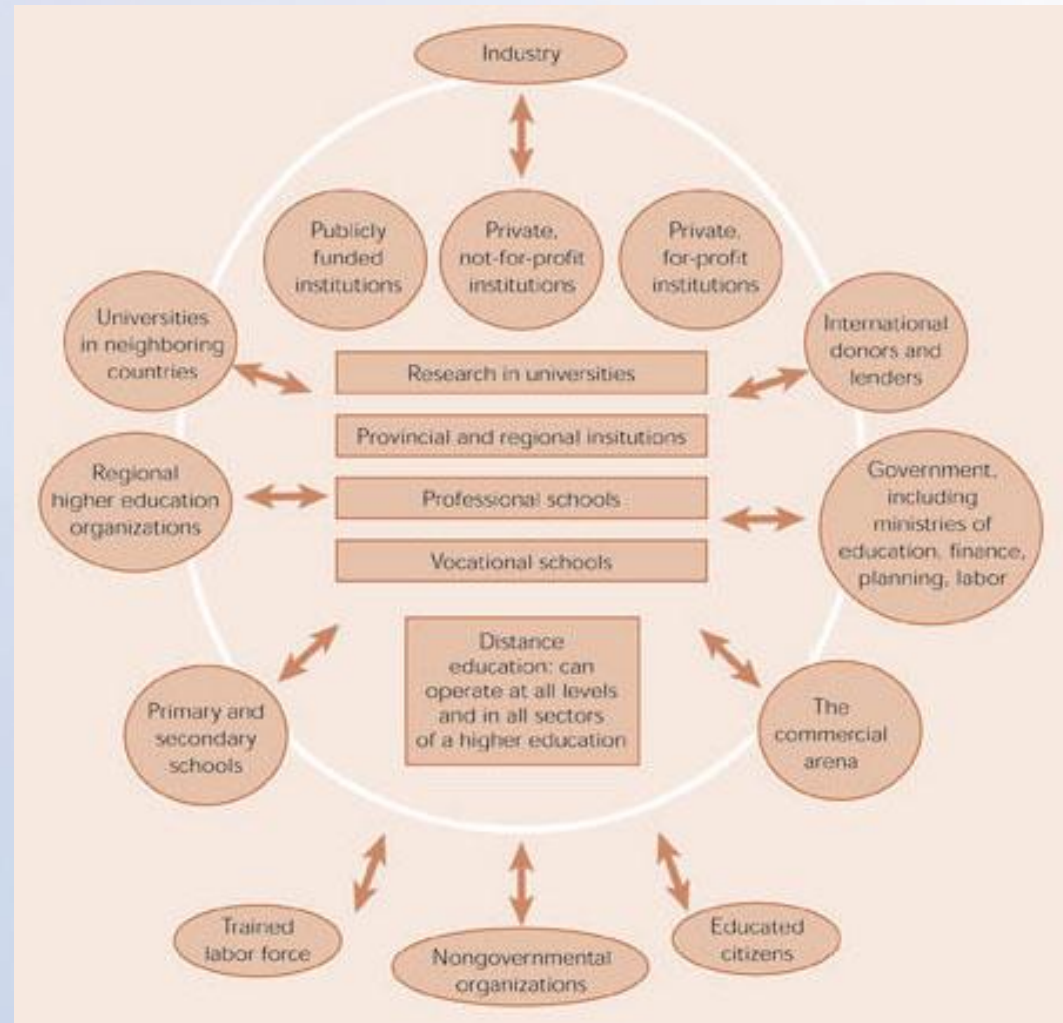
# Capacity development and systems



# Higher education as a CAS

Functions of higher education:

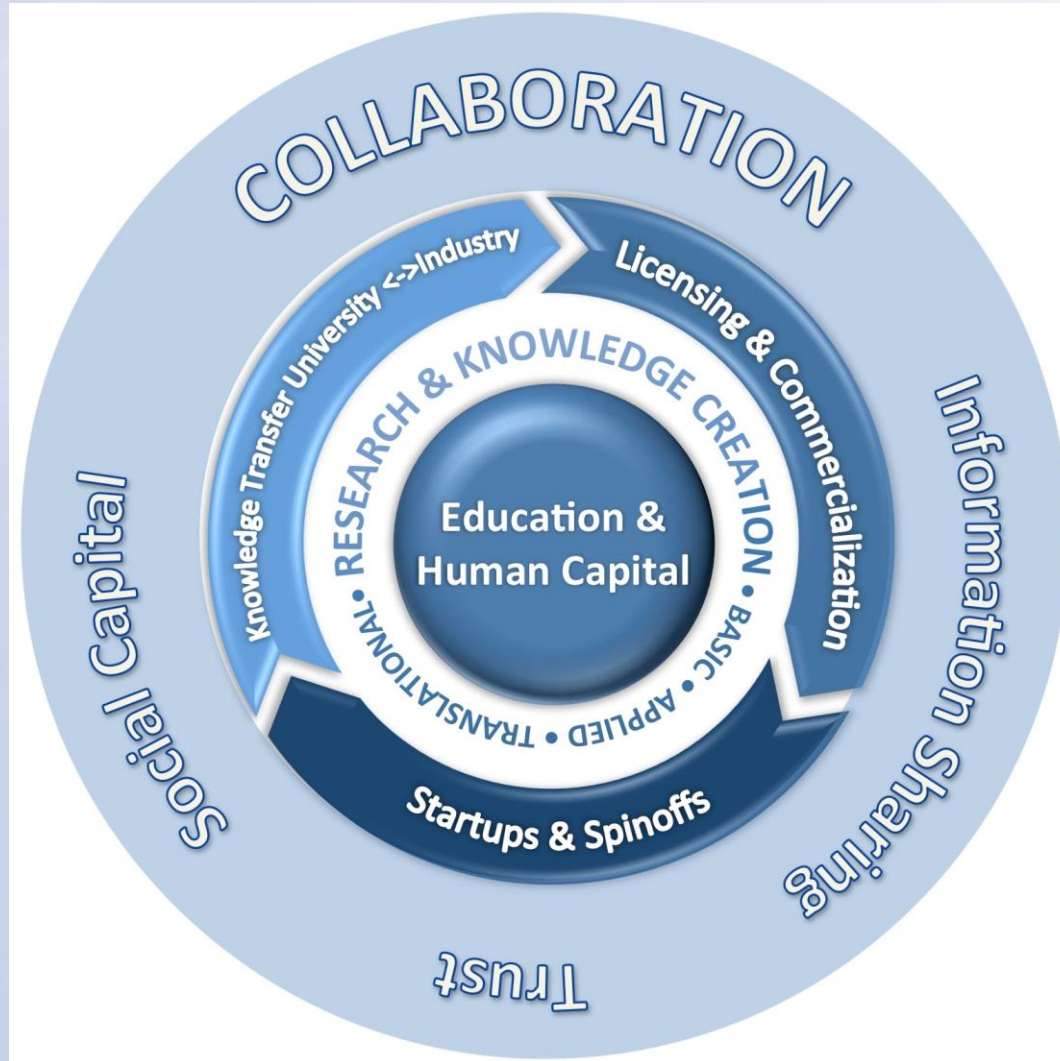
- Production of human capital
- Production of knowledge
- Production of innovation
- Contribution to sustainable socio-economic development



# RTI Innovation Ecosystem Assessment

- Map and score innovation ecosystems and locate higher education within
- Key informant interviews and surveys to identify areas of strength and weakness and dynamic relationships among various parts of the system
- Used as a diagnostic and design tool for higher education capacity building programs

# RTI Innovation Ecosystem Assessment



# Innovation Ecosystem Scorecard

Factor	Supply	Demand	Enabling Environment
Education and Human Capital Development			
Research and Knowledge Creation			
Transfer of Know-How between Universities and Industries			
Intellectual Property: Protection, Licensing and Commercialization.			
Startup and Spinoff Companies			
Knowledge Sharing, Trust, Social Capital			
<p>Key</p> <p>0 1 2 3 4</p> <p>Poor-----&gt;Excellent</p>			

## Philippines STRIDE example

- The USAID/Philippines Science, Technology, Research and Innovation for Development (STRIDE) Program is implemented by RTI International with partners Rutgers, Florida State, and the University of Michigan.
- The mission of USAID's STRIDE is to spur inclusive economic growth by boosting the capacity of Philippine universities to conduct science and technology research aligned with the growth requirements of the private sector, building up the innovation ecosystem for the benefit of the country.



# Philippines STRIDE example

Global Innovation Index Export

Rank	Country	Score	Value	Percentage Rank	Score View
7	Singapore	59.2	-	0.96	
10	Hong Kong (China)	56.8	-	0.94	
16	Korea, Rep.	55.3	-	0.89	
17	Australia	55.0	-	0.89	
18	New Zealand	54.5	-	0.88	
21	Japan	52.4	-	0.86	
29	China	46.6	-	0.80	
33	Malaysia	45.6	-	0.77	
48	Thailand	39.3	-	0.67	
56	Mongolia	37.5	-	0.61	
71	Viet Nam	34.9	-	0.51	
87	Indonesia	31.8	-	0.39	
88	Brunei Darussalam	31.7	-	0.39	
95	Fiji	30.4	-	0.34	
100	Philippines	29.9	-	0.30	
106	Cambodia	28.7	-	0.26	
140	Myanmar	19.6	-	0.02	

RTI developed and used ecosystem assessment to:

- Identify Priorities for STRIDE
- Look at system performance factors
- Discover hidden, connected issues

# 1. Reform of procurement rules for research activities

Key Finding: Restrictive regulations make procurement of equipment and consumables for research slow and complex. Equipment may arrive after grant expires.

① Origin is national enabling

environment challenge

① Research progress slowed or stopped: Universities can't deliver results in timely manner; Businesses do not gain / lose confidence in research ② and ③ extension collaboration with universities due to poor/slow performance.

④ Philippine innovations are late to market for licensing and/or spinoff, and miss opportunity for top publications.

⑤ Faculty discouraged, may abandon research profession or leave Philippines

Chain of Impacts: Procurement Rules

	Supply	Demand	Enabling
Education	⑤		
Research	①	②	①
Extension		③	
Licensing		④	
Startups		④	
Collaboration			

**STRIDE Action:** Work through GUIRR to secure exemptions from procurement regulations for grant-stipulated research equipment, or other appropriate measure(s) to reduce process-time.

## Conclusions/Lessons

- Reductionist efforts to focus on separate components of capacity do not provide a sound basis for higher education CD strategies and interventions
  
- To accommodate the emergent nature of CD
  - recognize no “one best way”
  - focus on identifying local champions and constituencies
  - allow flexibility, learning, and adaptation within donor procedures and regulations
  
- Higher education can be usefully framed as a nested complex adaptive system

## More Information

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# **SYSTEMS THINKING AND HIGHER EDUCATION IN DEVELOPMENT**

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on May 2, 2016

# Overview

- Context for Presentation
- Applying “Listen, Engage, Discover, Adapt” to Higher Education in Development
- Final Thoughts on “Internationalization and Global Engagement”

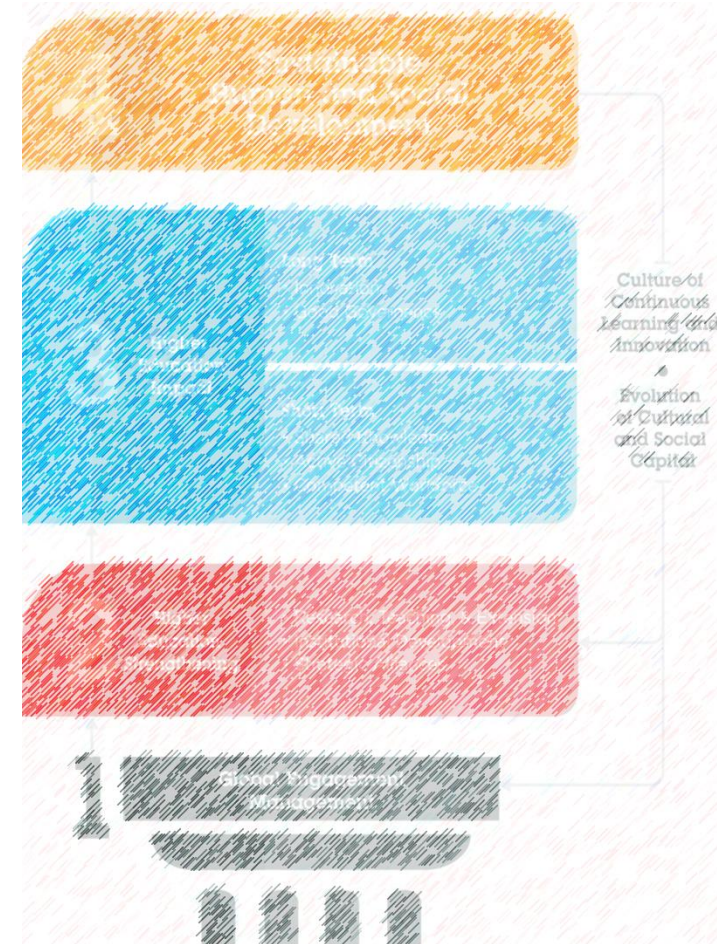
# Context for Presentation





# HED Meta-Analysis

- Analysis of 6 regional impact assessments of 64 partnerships conducted 2006-2012
  - Partnerships active 1998-2007
    - Eastern Europe (4)
    - Middle East Partnership Initiative (12)
    - South East Asia (13)
    - South Asia (15)
    - Sub-Saharan Africa (12)
    - Training, Internships, Exchanges, and Scholarships (TIES) in Mexico (8)
- In-depth case: Eastern European Impact Assessment





# HED Meta-Analysis

- Merriam's Constant Comparative Method of Case Study Analysis
  - Data read and re-read for comparative examination
  - Open, axial, and selective coding – inductive and deductive
- Data Management -Nvivo 10
- Data Quality
  - Peer Debriefing
  - Data Triangulation
  - Inter-rater/Observer Triangulation

Category Name	Definition			
Higher Education Strengthening	Impact of partnership on the development or strengthening of host country higher education			
Code NAME: Theme	Definition	Inclusion Criteria (include if text discusses)	Exclusion Criteria (exclude if text discusses)	Example from text
EDUCATIONAL EFFECTIVENESS: Education programs, courses and/or curriculum were created, improved and/or sustained via existence of partnerships	Impact of partnership on education-based factors within the host country institution	Educational offerings related to curriculum development and teaching methods; non-formal education (e.g. extension); exchanges; research	Weakened instructional offerings; improvements that are non-education related; mention of strengthened partnership without referencing a specific component, program, or collaborative effort	Maybe by ourself we might have changed the curricula, arranged some in it. But the project brought to us a consolidated experience of teaching them curricula, and, I think, with that without project, maybe we would not get the curricula in this table that we have now...
INSTITUTIONAL SYSTEMS DEVELOPMENT: Gains in institutional capacity building at host institution	Impact of partnership on the development and strengthening of host country higher education institution	Institution/program/department-level advancement; support or development of campus plans for growth and improvement (goals, mission, strategic plan, programs); institution/program/department-level awards; visibility or recognition/reputation-building	Human-level capacity building; pre-partnership institutional capacity building; loss in institutional capacity	We have, we have now probably one of the best business schools in Albania and this is due to the contribution of Hawaii University.
STRATEGIC PARTNERSHIPS AND ALLIANCES: Alliance building and growth of partnership-related network	Development of partnerships with constituents beyond the two partner institutions. Constituents should have a direct role/contribution in the formal partnership or became involved as a result of the partnership.	involvement of local actors; involvement of NGOs; involvement of political actors; involvement of private sector; expanded number of stakeholders and/or partnerships	Human-level capacity building; network contraction	So the ministry generally have been supportive. Yeah, this a general collaboration, but the project, we have got close collaboration now with the extension service ministry. I mean, there's more close collaboration, due to the fact of the project, you know?
				Subnodes
				1) Educational Offerings a) Curriculum Development b) Teaching Methods 2) Exchanges a) Activities b) Results 3) Extension and Community Outreach 4) Research a) Conducting Research b) Conferences and Publications c) Skill-building
				1) Centers, Departments & Institutes 2) Human Resources 3) Institutional Policies, Processes, & Strategies 4) Institutional Reputation 5) Leadership & Governance 6) Material & Technical Resources 7) Student Services
				1) Global Partners 2) Higher Education Consortia 3) Local Partners a) Embassy b) Government c) Local Organizations 4) USAID

Global Engagement Management	Relationship Management (Individual Level)	Relationship Sustainability	Yes No	Research Personal Administrative Support Teaching and Educational Offerings
		Establishing Relationships		
		Nature of Relationship	Types of Engagement	
		Expanding Networks	Limited or No Connections	
		Quantified Interaction		
	Individual Commitment	Partnership Strength	Strong Weak	
	Partner Contributions	Skills (Curriculum, Research, Technical)	Involvement and Collaboration	Infrastructure or Resources
	Partner Dynamic	Equal	Unequal	Local Ownership
	Partnership Management (Organization Level)	Partnership Sustainability	Yes No	Technology Infrastructure Physical Space and Resources Institutional Policies or Processes Personnel Fiscal Cross Cultural Context Institutional Leadership
	Impact of Conditions	External Conditions	Country Conditions	Hgt Poli Eco
Partnership Creation	How	Assessment Process of Creation Goal-Setting	International Context	
Why	Reasons for Creation			

# Systems Practice in Higher Education

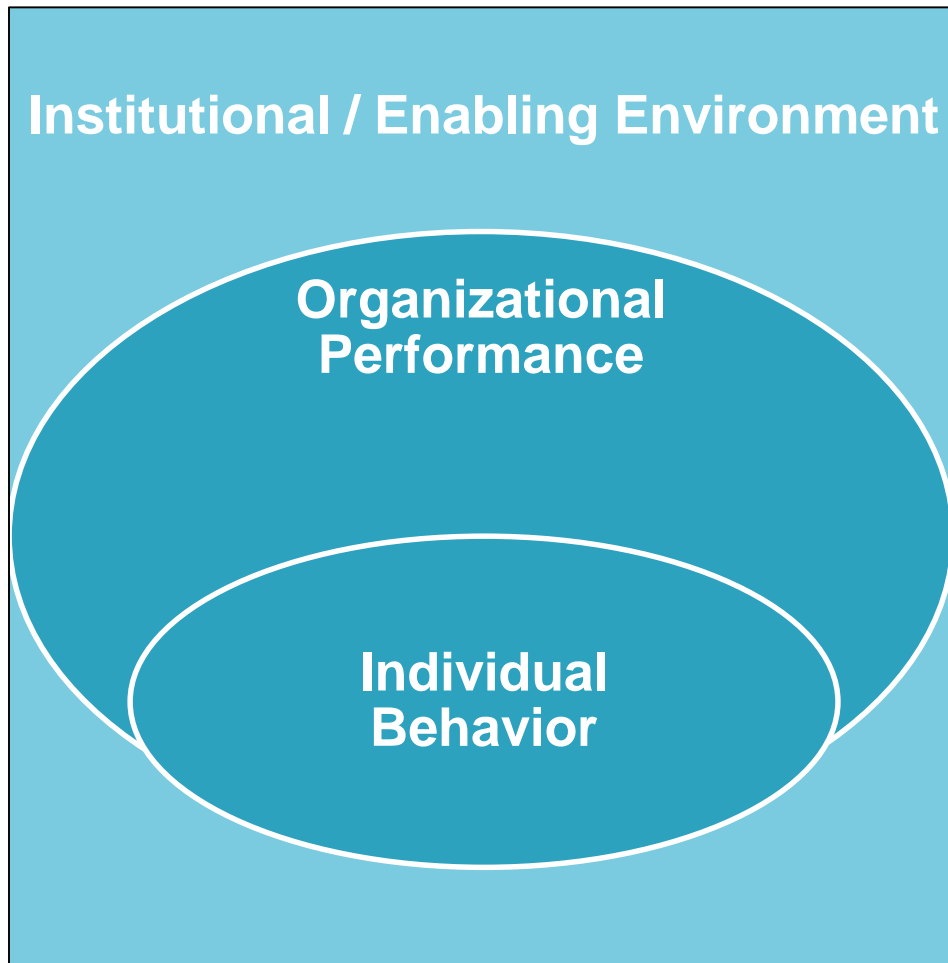


# Listen: *Seek to understand the system “as is”*



- More than 90% cited planning stage as critical
  - Doing “more homework in advance”
- Evidence of higher level outcomes when both institutions felt planning reflected mutuality characterized by:
  - Local ownership (HEI and other local organizations)
  - Sustainability of results discussed at start; created space for adaptive management

# Engage: *Identify & initiate changes*



- Engage diverse stakeholders
  - Horizontal and vertical
  - Internal and external
- Design interventions. In your theory of change, consider:
  - Level of change
  - Sequencing of change
- Intentionally plan and attend to feedback loops
  - Process and results

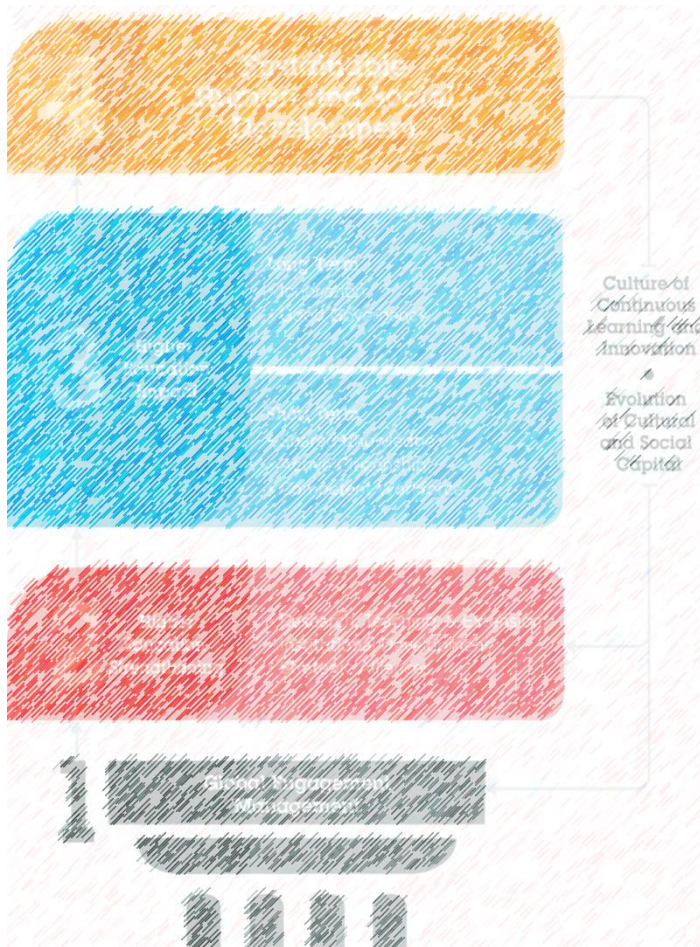
## **Discover: *Assess for effects on the system***

“The real voyage  
of discovery  
consists not in  
seeking new  
landscapes, but in  
having new eyes.”

– Marcel Proust

- Establish, manage, utilize, & adapt systems
- Look for both repeating and one-off, line and non-linear patterns
- Examine relationship between process and outcomes
- Apply rigor! Qualitative and quantitative

# Adapt: *Modify interventions based on discovery*



- Collaborating - C
  - Internal & external (i.e., not for benefit of implementers)
- Learning - L
  - Deliberate learning agenda
  - M&E system
  - Theory of change
- Adapting - A
  - Pause and Reflect



# Final Thoughts



# Internationalization ≠ Development

- Transactional vs. Transformational Partnership
  - “Partnerships focused exclusively on student exchange are at the transactional end because students are traded in a manner that resembles transactions in a marketplace.”
  - “Transformational collaborations, in contrast, are those that change or transform entire departments, offices, and institutions, through the generation of common goals, projects, and products.”

(Susan Buck Sutton & Daniel Obst, 2011)

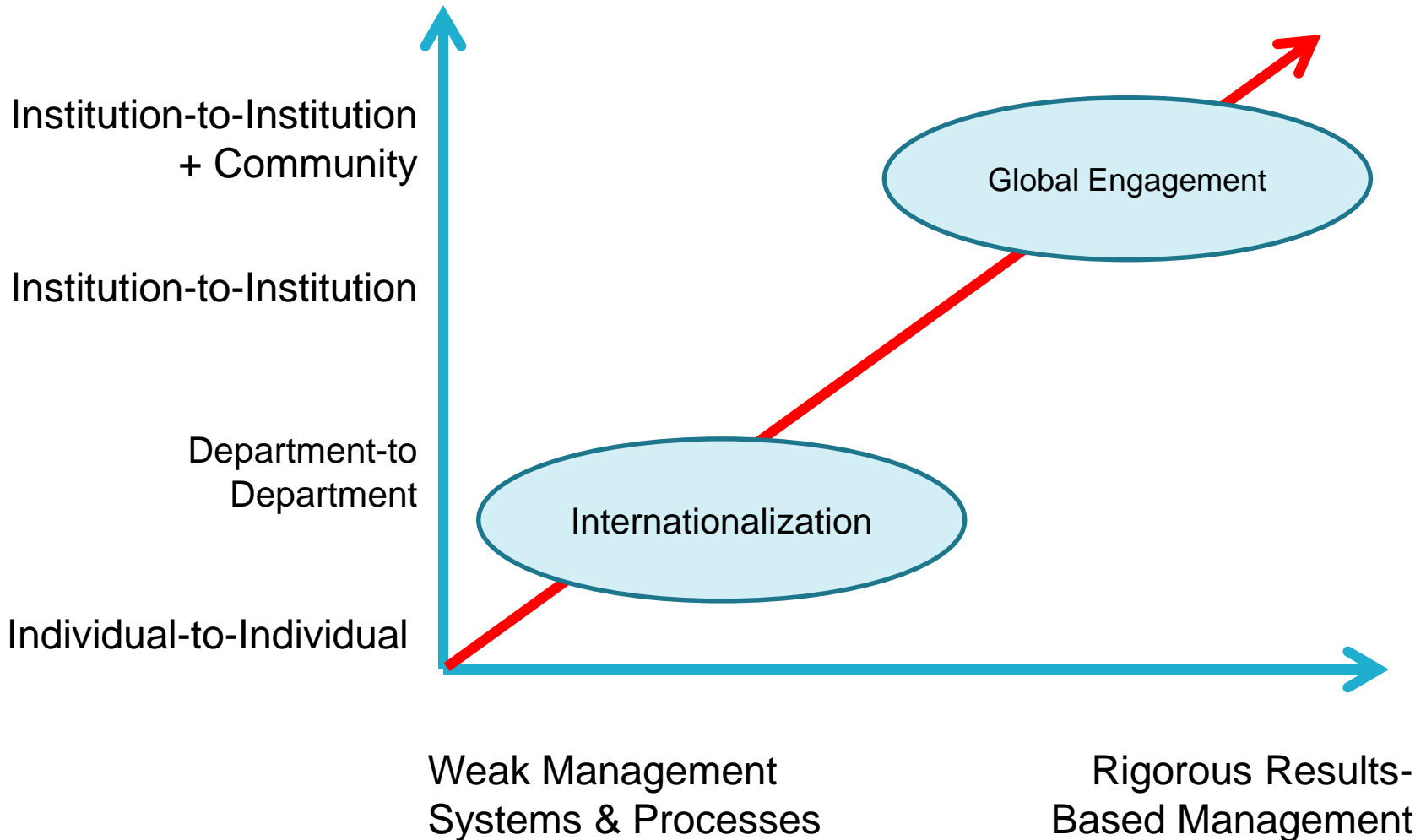


# Why?

“Global engagement encompasses a vast range of activities, which seldom add to a coherent strategy on campus. While many universities have included internationalization as part of an institutional strategy, few go beyond platitudes. Few define the nature of global engagement or internationalization and few operationalize how broad goals might be achieved... Academic institutions need a foreign policy. Such a policy needs to answer fundamental questions about motivations and means, aspirations and expectations. Most important *why* is the university involved.”

-Philip Altbach, The Boston College, CIHE, 2012

# Putting it All Together



**THANK YOU!**

# SUNY Global

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**SUNY**



# The State University of New York



- University Centers and Doctoral Degree Granting Institutions
  - University Colleges
  - Technology Colleges
  - Community Colleges
- \* Empire State College has 35 locations throughout New York State.

systemness ['sɪs-təm-nəs] n

1. the coordination of multiple components that when working together create a network of activity that is more powerful than any action of individual parts on their own.



A close-up photograph of a red book with a textured cover, resting on a dark wooden surface. The book is slightly open, showing the edges of the pages. Overlaid on the book is the text "THE WHOLE IS GREATER THAN THE SUM OF ITS PARTS" in a bold, white, sans-serif font, arranged in three lines. The text is centered horizontally and vertically on the book's cover.

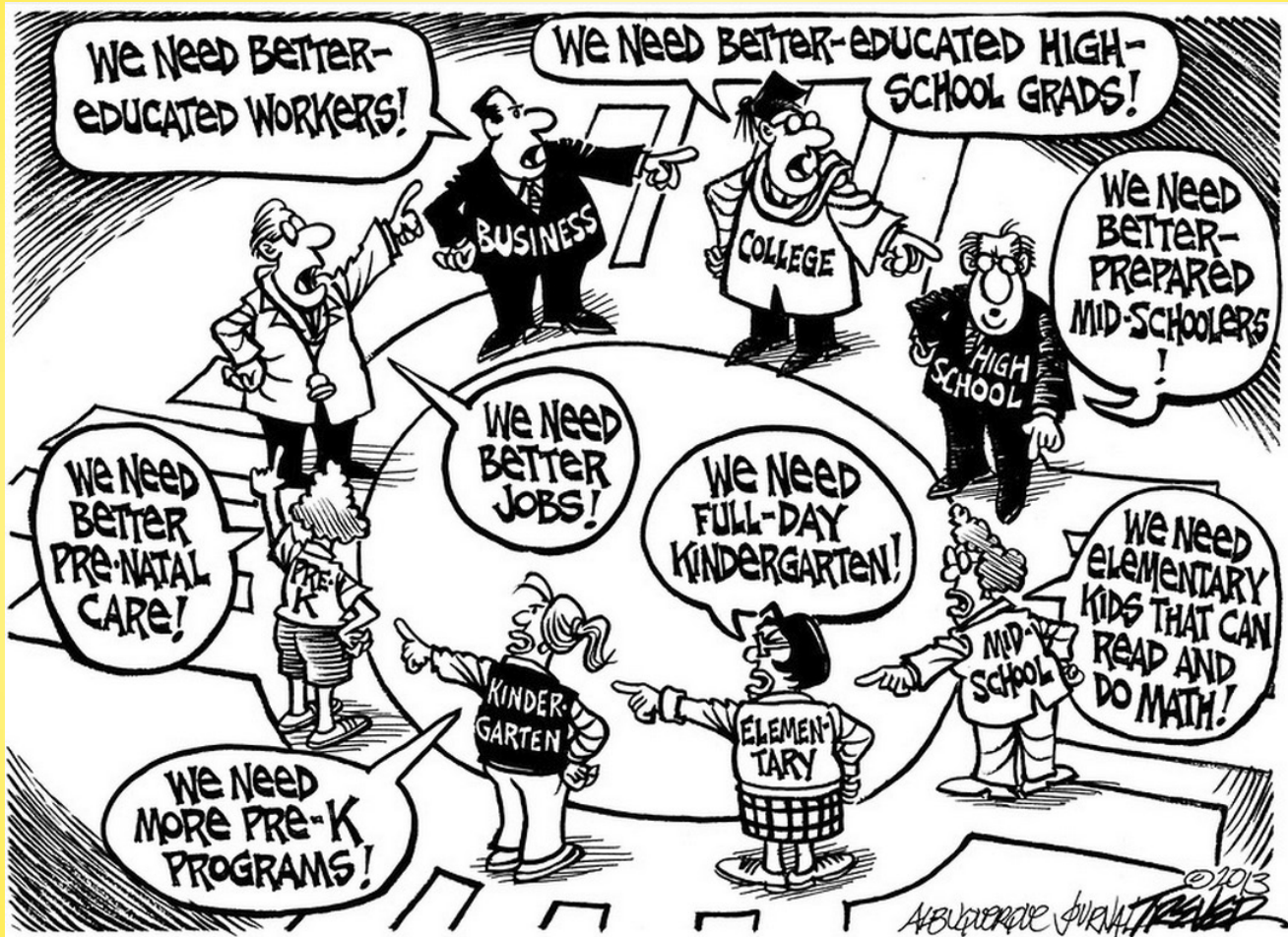
**THE WHOLE IS  
GREATER THAN THE  
SUM OF ITS PARTS**





# COLLECTIVE IMPACT





# What is Collective Impact?



## Five Conditions of Collective Success:

- Common Agenda
- Shared Measurement Systems
- Mutually Reinforcing Activities
- Continuous Communication
- Backbone Support Organizations

# What is Collective Impact?

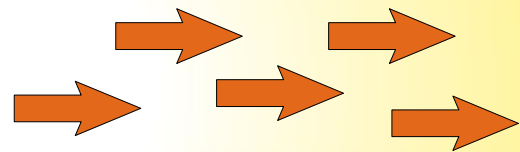
## Collaborative Action

A group working towards the same outcome  
Using disaggregated **data**  
Continuously improving practices over time



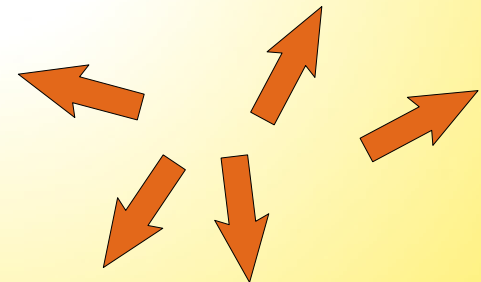
## Coordinated Action

A group of practitioners working on a specific issue  
Sharing program information/design  
Aligning efforts around a specific issue or population



## Individual Action

Individual practitioners working on specific issues  
Collecting qualitative and quantitative data for their individual programs  
Demonstrating impact



# What is Collective Impact?

## COLLABORATION

Convene around  
programs/initiatives

Use data to prove

Addition to what you do

Advocate for ideas



## COLLECTIVE IMPACT

Work together to  
move outcomes

Use data to improve

Is what you do

Advocate for what works

# Four Pillars for Collective Impact

**Pillar 1:  
Convening Key  
Stakeholders**

**Pillar 2:  
Identifying  
Shared Goals**

**Pillar 3:  
Evidence-Based  
Decisions**

**Pillar 4:  
Sustaining  
Success**

# Strategies for Collective Impact

**Disciplined  
Approach**

**Data and  
Technology**

**Shared  
Accountability,  
Individual  
Responsibility**

**Foundation  
in Policy**





**COLLECTIVE**

**IMPACT**

**Goes GLOBAL**

# Learning through Development

A new SUNY initiative that endeavors to provide service learning, research and development opportunities for SUNY students and faculty through guided and supported placements in the developing world

Long-term  
commitment  
to regional  
priority area

Campus  
engagement:  
research,  
exchange,  
service  
learning

Vital  
partnerships  
with local  
stakeholders

University  
exchange to  
support  
program  
sustainability



# Learning through Development



# Learning through Development

- ➔ Foster capacity building with local universities
- ➔ Partner with local organizations and NGOs
- ➔ Collaborate with U.S. and international organizations with exceptional experience and knowledge of priority region
- ➔ Support linkages between development projects and economic sectors