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BUILDING UNIVERSITY-INDUSTRY LEARNING AND DEVELOPMENT THROUGH INNOVATION AND TECHNOLOGY (BUILD-IT) ALLIANCE MID-TERM PERFORMANCE EVALUATION



Photo: Quynh Giao

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BUILDING UNIVERSITY-INDUSTRY LEARNING AND DEVELOPMENT THROUGH INNOVATION AND TECHNOLOGY (BUILD-IT) ALLIANCE MID-TERM EVALUATION

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The author's views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government.

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ACRONYMS

ABET	Accreditation Board for Engineering and Technology
ADS	Automated Directives System
AOR	Agreement Officer's Representative
ASEAN	Association of Southeast Asian Nations
AUN/QA	ASEAN University Network Quality Assurance
ASU	Arizona State University
BUILD-IT	Building University-Industry Learning and Development through Innovation and Technology Alliance
CEA	Center for Education Collaboration
CLA	Collaborating, Learning and Adapting
DQA	Data Quality Assessment
GVN	Government of Vietnam
HCMC	Ho Chi Minh City
HEEAP	Higher Engineering Education Alliance Program
HEI	Higher Education Institution
HELIX	Higher Education Learning and Innovation Exchange
HE-STEM	Higher Education – Science, Technology, Engineering and Math
M&E	Monitoring and Evaluation
MoET	Ministry of Education and Training
MoIT	Ministry of Industry and Trade
MOU	Memorandum of Understanding
MSI	Management Systems International
PIRS	Performance Indicator Reference Sheets
PTIT	Posts and Telecommunications Institute of Technology (Vietnam)
QI	Quarter I
SETI	Science, Engineering, Technology and Innovation
SHTP	Saigon Hi-Tech Park
STEM	Science, Technology, Engineering and Math
USAID	United States Agency for International Development
VEMSS	Vietnam Evaluation, Monitoring, Evaluation and Survey Services (Project)
VNU	Vietnam National University
VULII	Vocational and University Leadership and Innovation Institute
WEPICS	Women Engineering Projects in Community Service
WiSTEM	Women in Science, Technology, Engineering and Math
YI	Year I

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EXECUTIVE SUMMARY

Launched in September 2015 and continuing through September 2020, the Building University-Industry Learning and Development through Innovation and Technology (BUILD-IT) Alliance is managed by Arizona State University (ASU) on behalf of the US Agency for International Development (USAID). Based on the pillars of institutional policy, quality, curriculum, faculty innovation and technology, BUILD-IT leverages deep and diverse government-industry-academic partners that share a goal of tightly linking science, technology, engineering and math (STEM) instruction in Vietnamese higher education institutions to the needs and capabilities of industry partners to produce graduates who can lead inclusive, technology-based growth. The rapid adoption of educational innovation will be driven by the input of key stakeholders through their participation in semi-annual Solutions Councils managed by the project. A network of maker innovation labs will support curricular innovation, providing students and faculty with a venue to implement the applied-problem and project-based curriculums being developed. The Higher Education Learning and Innovation Exchange (HELIX) portal will serve as a web-based repository for educational assets, resources and faculty training and development tools.

To achieve these ends, BUILD-IT has the three development objectives:

- **Objective 1: Strengthen Higher Education Policy**
- **Objective 2: Improve Academic Programs and Outcomes**
- **Objective 3: Enable University – Private Sector Collaboration**

The BUILD-IT Alliance's approach is to support eight key program activities utilizing experts and partners drawn from industry, government and academia. By engaging partners from these sectors at the strategic level, BUILD-IT: ensures industry's active voice and investment, driving decisions and the implementation of new curricular design; engages government and university leaders for policy reform; and promotes inclusive engagement of all partners in solutions across the eight activities. The eight program activities are:

- A1: Increasing Private Sector Engagement
- A2: Leadership Development for Effective Policy Makers
- A3: Leadership Development for Women in Higher Education (HE)-STEM
- A4: Developing Quality Systems, Accreditation, Training and Support
- A5: Certified Facilitator Model: Improving Instructional Quality
- A6: Implementing Curricular Innovation: Project Spine
- A7: Developing Maker Innovation Network
- A8: Establish HELIX

Evaluation Purpose

As the project continues midway into its second year, USAID determined that a mid-term evaluation of the project to make course corrections should be conducted starting in March/April 2017 rather than waiting until the actual mid-point of the project, which would be a year later. This evaluation had three objectives:

- 1) Assess the progress being made towards project objectives. Analyze the degree to which the overall project is progressing towards achieving its goals and objectives.
- 2) Review project strategies for partnership establishment, coordination and management.

- 3) Recommend technical and management adjustments, as necessary, to ensure the project goal can be achieved by the conclusion of the fifth year of the project.

A three-person independent team, including Dr. William K. Dunworth- international education expert and Dr. Quyen Do- national education specialist, from Management Systems International (MSI) conducted the evaluation under the USAID/Vietnam Evaluation, Monitoring, and Survey Services (VEMSS) Project.

Evaluation Questions and Design

The evaluation responded to three multi-part questions. The higher-level questions were:

- To what degree is the project on track to achieve planned results at goal level and within key areas: (a) strengthening higher education policies; (b) enabling university-private sector collaboration; and (c) improving academic programs and learning outcomes? How sustainable are the results expected to be after BUILD-IT's completion?
- How is the project multi-partnership approach (university partners, the private sector and Government of Vietnam [GVN]) facilitating the project's progress towards achieving the expected results?
- How can project performance be strengthened? (Priority focus: streamlining partners, activities and monitoring and evaluation [M&E])

To answer the evaluation questions, the team drew on a variety of data collection methods including semi-structured key informant interviews, group interviews, structured and participant observation, and document review.

Additional details on the evaluation methodology, including how the evaluation team applied content analysis, contribution analysis, and beneficiary analysis; selection of key informants; and data collection, coding and analysis, are provided in **Annex II**.

Limitations

The team approached the evaluation with as much methodological rigor as possible, though there are certain limitations which may have an impact on the findings. Chief among these is the fact that the project is in its second year (Y2) of implementation, and activities intended to develop the capacity of partner universities started late in year 1 (Y1). Because many of those activities are still in process, outcomes have not been fully realized yet.

Findings

This section summarizes the findings by evaluation question.

Question 1: Achieving Planned Results for the Three Project Objectives

Objective 1: Policy Development

- **Policy Training:** The project is advancing steadily in implementing policy training. Needs have been assessed and universities are engaged around developing policies to meet the most complex difficulties identified by the assessment and confirmed by university leaders.

- **University Participation:** The project reported exceeding its Y1 target for executive leaders trained. In Y2 it is still working towards achieving its annual target. In its Y2 quarterly reports, the project team reports it has made an effort to increase and focus university participation in the policy workshops. Participants in university policy workshops are not at expected seniority levels as stated in university memoranda of understanding (MOUs).
- **Policy Development:** Because policy training is still being implemented and because intended effects are toward long-term changes, it is too early to determine the impact on publication of new, or revision of existing, policies at the partner university level. It is also difficult to make a firm determination about the impact of training on participants' ability to develop and update university policy.

Objective 2: Improving Academic Programs and Outcomes

- **Engagement in Training:** On an aggregate basis, the project exceeds targets for personnel participation in training on quality academic programming, pedagogy, and curricular innovation. Disaggregation of participation data on an institution-by-institution basis reveals very uneven levels of engagement by partner universities.
- **Curricular Training:** The value placed on curriculum spine training is generally good, though some report challenges in implementation. Inconsistent expectations about the purpose and target audience of quality assurance seminars have resulted in some dissatisfaction among stakeholders.
- **Quality Assurance:** The initial accreditation results being achieved through the program align with accreditation targets identified in the university partner MOUs. However, these achievements are not necessarily correlated to accreditation training that has been offered through the project.

Objective 3: Enabling University-Private Sector Collaboration

- **Student Engagement:** University-private sector collaborations have started to provide opportunities that engage students in national competitions, Women in STEM advocacy, and hands-on learning; however, students at partner universities are largely not aware of BUILD-IT and the opportunities it is providing to faculty and indirectly to them in enhanced learning opportunities to improve their workforce readiness.
- **Women in STEM:** Universities appear to struggle with some of the university-level Women in STEM obligations they have on the project; therefore, the project is seeking ways to guide partner universities to identify ways to collaborate on campus-level initiatives that will build support for women.
- **Maker Spaces:** The implementing partners highlight the planned Maker Innovation Spaces—where university students design, create, prototype, and invent products and services through a variety of entrepreneurial and curricular platforms—as a leading means of providing students, faculty and industry partners with opportunities to collaborate around hands-on learning. Universities and industry partners seek more information about how the spaces will be integrated into the project given the limitations around the resource.

Overall Progress of Project

- **Evaluation of Results Framework:** Implementing partners and the donor feel that it is too early to make a definitive assessment on the validity of the results framework given that all components have not been fully engaged yet. For the moment they feel that the framework is

sound. Nevertheless, comparison of the results framework to descriptions in project documents and data emerging from key informant interviews suggests several areas where the framework could be reviewed at this early stage of implementation. In particular, assessing university stakeholder engagement around the process of change at their respective institutions gives a different perspective on activity contribution to results at the university level.

- **Sustainability of Results:** The project is delivering high-level training and other means of support to the universities as described in the project design. There is not yet clear and consistent evidence that these efforts will result in sustainable change across all partner universities.
- **Project Reporting:** The project is reporting results in the manner requested by USAID at the outset of the project, while adapting reporting based upon further requests by the donor. Disaggregating results by partner institution and stakeholder could give USAID a more focused understanding of project successes and challenges as they emerge during implementation.

Question 2: Multi-Partner Approach

- **Implementation Approach:** The implementing partner has assembled an impressive group of academic, industry and governmental partners to support the project. Two of the three platforms meant to support the alliance—the HELIX Portal and the Maker Innovation Lab Network—are at earlier stages of implementation. The Stakeholder Councils have been launched, but they have been implemented differently than originally intended.
- **University Commitment:** In assembling a group of university partners from across Vietnam, ASU has leveraged the relationships it has developed through its past programs in the country, while expanding it to include new institutions. Engagement tends to be stronger with institutions where the implementing partner has a relationship history.
- **Industry Partner Commitment:** The implementing partner has identified and involved a strong roster of industry partners that appear very committed to supporting the attainment of project results. Though some challenges concerned the industry partners in the early stages of the project, they are interested in working with university stakeholders and look forward to being involved in the ongoing implementation of BUILD-IT.
- **Academic Program Focus:** The project focus is broad and there is no clear articulation of specific programs from a capacity-building perspective. The Project Spine offerings appear to focus more on technology and engineering subjects. There does not appear to be consensus on reducing academic disciplines in the current program structure.
- **Benefits Perceived by Stakeholders:** Stakeholder groups in BUILD-IT all perceive real benefits to participation in the project. University stakeholders focus on the opportunity to engage with industry partners and the benefits from practical training. Industry partners see benefit in engaging directly with universities to improve the workforce readiness of graduates and, in some instances, to expand the market for their products or services. However, because not all project activities and resources have been fully launched, perceptions of benefits remain primarily focused on future benefits.
- **Impact on Workforce Readiness¹:** It is still too early in the implementation of the project for stakeholders to perceive that workforce readiness of graduates has improved through

¹ USAID Education Strategy Implementation Guidance: “Workforce readiness creates and sustains pre-employment and employability programs for male and female youth and men and women in formal and non-formal settings” and “Investment in leverage point in the system is encouraged, such as: tertiary education partnerships financing broadly inclusive and high quality

BUILD-IT given that the project's activities in this area depend heavily on industry commitment and reliance on their own aims for recruitment rather than a direct emphasis on imparting life skills, apprenticeship, or internship. There also appear to be inconsistent definitions of workforce readiness that may impact how it is defined for the project.

- **GVN Support:** Representatives of the GVN express awareness and support for BUILD-IT activities conceptually. The project highlights its engagement with multiple parts of the government; however, there is disagreement among project stakeholders concerning how the Ministry of Education and Training (MoET) can and should be involved.
- **Expanding vs. Contracting Program Reach:** Government and university stakeholders are consistent in their desire for BUILD-IT to expand and not reduce the number of universities involved in the project, but they recognize that this is unlikely given limited resources. Increasing the number of partners without increasing resources could dilute impact. Decreasing the number could also have a negative effect on outcomes.

Question 3: Strengthening Project Performance

- **Why Partners Struggle or Excel:** Leadership and internal politics within institutions seem to be at the core of whether a partner university succeeds or struggles. Progress also depends on relationship building between the implementing partner and the university.
- **Implementation Challenges:** Stakeholders face internal challenges related to engaging in the opportunities for learning on the project, and the project works with them to aid in this effort. However, a deeper, more collaborative approach to university partner engagement could help strengthen these efforts.
- **Knowledge Sharing:** The project has introduced some effective mechanisms to boost knowledge sharing and cross-fertilization of success factors. There are additional mechanisms that can further strengthen sharing.

Principal Conclusions

- BUILD-IT is in early days of implementation but is being implemented as designed.
- The level of partner-university engagement varies.
- The project is struggling to engage some university rectors given that the learning and knowledge update process takes time, particularly as agents of change in the policy development process.
- Both the project's design and university internal issues are reasons for uneven engagement.
- BUILD-IT lacks a clear and consistently understood vision.
- Prior relationships between the implementer and universities tend to strengthen university engagement in BUILD-IT.
- At certain universities, the project is more engineering/technology than fully STEM focused; whereas at others the opposite challenge is the case.
- The evolving multi-partner approach has a strong group of industry partners who seek more direct engagement with universities, and universities seek more engagement with them.

training programs; mainstreaming of workforce readiness and vocational education systems; or funding platforms that enable private sector partners to collaborate more effectively with education and training providers for more relevant curriculum and higher standards.” http://pdf.usaid.gov/pdf_docs/pdact461.pdf

- The purpose of Solutions Councils has changed and some partners question this.
- Unresolved questions exist about how and when the GVN should be involved in the project.
- It is too early to determine sustainability of results, though uneven university engagement raises concerns about the ultimate extent of systemic impact and sustainability.
- Compared to other project documents, the results framework does not focus explicitly on enhanced workforce readiness of students as an overarching result of BUILD-IT.
- The project appears to take a primarily top-down workshop approach that does not appear to consistently engage university leaders in stewarding the strategic building of capacity at their institutions.
- There are pros and cons to increasing or decreasing the number of targeted universities and disciplines.
- The current M&E focus on aggregate reporting of results does not reflect the uneven level of partner university participation in activities intended to build their institutional capacity.

Principal Recommendations

- 1) **Articulate a clear vision for BUILD-IT.** Though the implementing partner feels the vision for BUILD-IT is clear, there nonetheless appears to be some inconsistency of understanding among stakeholders of what the project is and is not.
- 2) **Refocus the results framework.** The framework should flow from a shared vision for the project with its components explicitly integrated to sharpen focus on higher-level results. In particular, the framework should emphasize the way curricular and instructional quality improvement will strengthen the workforce readiness of STEM graduates. Policy development and collaboration with industry partners should also be channeled to support these higher-level results.
- 3) **Consider the possibility of focusing the project through a reduction in the number of partner universities.** There are universities that are struggling on the project, and it is not fully clear to what extent those struggles emerge from causes solely within the universities themselves, or from the challenges universities face in trying to engage with a project that has so many moving parts. If budgetary constraints limit the project's ability to intervene with these partners, the project should consider ways to reduce the number of partner universities.
- 4) **Balance top-down and bottom-up capacity building.** BUILD-IT provides opportunities for partner universities to develop their capacity around critical areas. However, it falls to the institutions—particularly the leaders of those institutions—to take ownership and create the environment of change. This appears to happen at some institutions, but not at others.
- 5) **Consider focusing BUILD-IT on a specific number of academic programs at each institution.** There are valid arguments for and against the current broad approach. However, in thinking of systemic capacity building as both a top-down and bottom-up exercise, at the level of individual universities, there is a case to be made for focusing some of the project's learning-based resources to achieve higher impact across a more clearly defined, narrower range of programs. In order to maintain the integrity of the project, the overall STEM “brand” could remain for large-scale events such as annual conferences that seek to effect systemic change in Vietnamese universities as a whole.
- 6) **Revise university MOUs around outcomes critical to project success.** To focus universities on their obligations in achieving project results — and given that they're now more familiar with expectations beyond making initial contact — BUILD-IT may wish to consider revising the MOUs to give universities more explicit responsibility for outcomes at the institutional level. Such outcomes

could be specific targets for policy adoption, implementation of new curricular models, and creation of incentives to encourage faculty to adopt new instructional methods.

- 7) ***Make explicit the conceptual framework for BUILD-IT to strengthen focus on the multi-partner approach.*** Making the focus on ecosystem development explicit through the use of a conceptual framework can help make BUILD-IT's engagement with government, industry and academic partners more collaborative, purposeful and adaptive. This can help to strengthen the impact of the multi-partner approach.
- 8) ***Consider how to optimize GVN and industry partners' involvement.*** Evidence indicates that stakeholders need to be engaged regarding how and when representatives of the GVN should be involved in the project. This refers specifically to MoET's involvement as a strategic partner.
- 9) ***Continue to strengthen and empower BUILD-IT's local Vietnam team.*** Based on stakeholder feedback, there is the opportunity and, at some levels, the need to empower the local BUILD-IT team to a greater extent. The project's strategic direction is U.S.-based, while the operational support is Vietnam-based. Continuous efforts to build the capacity of the local team and empower it to build deeper multi-level relationships can strengthen the achievement of project results.
- 10) ***Move from aggregated to disaggregated M&E reporting.*** To achieve results on the macro level of STEM higher education in Vietnam, it is important to understand how results are being achieved at the micro level of individual partner universities. Expanding reporting to include institutional disaggregates can provide a basis for understanding where areas of strength and weakness are in the evolving innovation ecosystem.
- 11) ***Complement M&E reporting with collaborating, learning and adapting (CLA) approaches.*** The quarterly M&E reports provided to USAID include a section on lessons learned. A lessons learned approach is useful, but it takes a traditional rear-view perspective on learning. A continuous-learning approach could help USAID engage implementing partners and other stakeholders around the tacit knowledge that is a critical but under-considered part of a project's ultimate success or failure. This is the essence of CLA approaches.

PROJECT BACKGROUND

Launched in September 2015 and continuing through September 2020, the Building University-Industry Learning and Development through Innovation and Technology (BUILD-IT) Alliance is managed by Arizona State University (ASU) on behalf of the US Agency for International Development (USAID). Based on the pillars of institutional policy, quality, curriculum, faculty innovation and technology, BUILD-IT leverages deep and diverse government-industry-academic partners that share a goal of tightly linking science, technology, engineering and math (STEM) instruction in Vietnamese higher education institutions to the needs and capabilities of industry partners to produce graduates who can lead inclusive, technology-based growth. The rapid adoption of educational innovation will be driven by the input of key stakeholders through their participation in semi-annual Solutions Councils. A network of innovation labs will support curricular innovation, providing students and faculty with a venue to implement the applied-problem and project-based curriculums being developed. The Higher Education Learning and Innovation Exchange (HELIX) platform will serve as a web-based repository for educational assets, resources and faculty training and development tools.

Strengthening Higher Education Policy: BUILD-IT works with institutions and policy makers to develop and formalize new practices and university policy systems in response to the changing educational environment. Executive leadership training in collaboration with Portland State University embeds world-class institutional policy practices within rectors and senior leadership in Vietnamese universities.

Enabling University – Private Sector Collaboration: BUILD-IT develops curricular partnerships, mentorships and industry-sponsored experiential opportunities in innovation spaces, building students' professional and technical competencies in preparation for STEM careers. BUILD-IT facilitates semi-annual student-industry engagement events, launches campus-based programs providing female mentors in STEM careers, and hosts Women in STEM Leadership forums supporting academic initiatives and scholarships for women in STEM degree programs.

Improving Academic Programs and Outcomes: The Certified Facilitator program leverages in-country trainers and distance technologies to create sustainable long-term faculty development and wide-scale implementation of innovation and modern methodologies. Through public-private partnerships in curriculum development, partner institutions will establish a project-based curriculum spine comprised of experiential learning opportunities. The project will also strengthen industry-university linkages across multiple curriculum platforms via industry-sponsored projects, co-ops, capstone design projects and apprenticeships. BUILD-IT partners with national assessment institutes in developing quality assessor training for national impact. Partner institutions will also participate in institutional, academic program and course quality training, designed in collaboration with Catholic University of America, and will establish robust assessment and evaluation systems to support continuous program improvement and international recognition and accreditation.

EVALUATION PURPOSE AND QUESTIONS

As the project continues into its second year, USAID determined that a mid-term performance evaluation of the project should be conducted starting in March/April 2017. This evaluation has three objectives:

- Assess the progress being made towards project objectives, and analyze the degree to which the overall project is progressing towards achieving its goals and objectives.

- Review project strategies for partnership establishment, coordination and management.
- Recommend technical and management adjustments, as necessary, to ensure the project goal can be achieved by the conclusion of the fifth year.

In accordance with USAID's Automated Directives System (ADS) Chapter 201, a project evaluation is ultimately meant to serve as one of multiple **learning tools** that comprise a Mission's comprehensive monitoring, evaluation and learning toolkit.

As USAID continues its efforts to build a culture of collaborating, learning and adapting (CLA) across Missions, programs and projects, a mid-term evaluation is a tool intended to stimulate generation and application of new knowledge and learning during project implementation. This mid-term evaluation should, therefore, stimulate consideration of how the BUILD-IT project may optimally seek out, consider and apply learning to continuously manage collaboratively and adaptively.

The evaluation therefore has sought to answer the following questions:

- 1) To what degree is the project on track to achieve planned results at goal level and within key areas: (i) strengthening higher education policies; (ii) enabling university-private sector collaboration; and (iii) improving academic programs and learning outcomes? How sustainable are the results expected to be after BUILD-IT's completion?
 - a) To what extent are the theory of change causal linkages relevant to achieving the expected results?
 - b) How are the program activities contributing to the expected results? What are the reasons behind successes or shortfalls, if any?
 - c) What conditions are needed to ensure sustainability of expected results? Is there evidence that these conditions exist or are in the process of being established?
 - d) To what extent are the expected results (at different levels) sufficiently captured, monitored and reported?
- 2) How is the project's multi-partnership approach (university partners, the private sector and GVN) facilitating the project's progress towards achieving the expected results?
 - a) To what degree is the current approach effectively identifying and involving relevant and highly committed university partners? To what degree is the current approach effectively identifying and involving relevant and highly committed private sector partners?
 - b) Which academic disciplines within STEM stand to benefit the most? Why (if at all) do some disciplines benefit more than others? Are there ways to focus activities in order to reduce the number of academic disciplines included and to tighten participation?
 - c) How do different stakeholder groups (private sector partners, faculty and students) perceive real benefits of participating in the program? To what extent do stakeholders perceive that the workforce readiness of students has improved under the project?
 - d) To what degree is the GVN aware of and supporting BUILD-IT activities? Is there a need to reduce or expand the range of universities in the project, based on either ministry priorities or level of expected involvement of individual schools? How do stakeholders perceive that an expansion or reduction in the range of universities in the project would affect performance overall and at individual institutions?
- 3) How can project performance be strengthened? (Priority focus: streamlining partners, activities and monitoring and evaluation [M&E])

- a) Why, if at all, do specific partner institutions struggle or excel in performing under the project?
- b) What challenges or difficulties do partners or beneficiaries experience in the implementation of the project? How can these challenges be reduced or corrected?
- c) How can distinctive factors contributing to success in certain partner institutions be applied more broadly across the entire project?
- d) How could M&E be approached differently to optimize performance in the remaining life of the project?

EVALUATION METHODOLOGY

Evaluation Approach

Since the evaluation is meant to assess BUILD-IT progress towards project objectives, as well as how this progress can be strengthened and/or augmented, a primarily qualitative research approach is warranted.² Qualitative methods are ideally suited to answer the “how” and “why” questions that underpin the process of project implementation. To enact this qualitative design, the evaluation team drew on a variety of data collection methods including semi-structured key informant interviews, group interviews, observation and document review.

The evaluation team analyzed data through semi-grounded assessment methods. As a methodological approach, grounded theory methods are designed to develop theories of operation anchored in local context. In the BUILD-IT evaluation, grounded assessment methods were used based on a systematic, inductive and constantly comparative approach that relied on secondary sources, semi-structured key informant interviews, group interviews and direct site observation to reconstruct baseline information and to determine how the project is affecting change. The team undertook *content* analysis of these diverse data sources to identify “exemplars” that fit into categories or themes. In the case of BUILD-IT, “exemplars” are pieces of data that illustrate instances of how different activities in the project interact and *contribute* to (or perhaps detract from) attainment of project objectives. Coding of such “exemplars” into conceptual categories helped build understanding of how effectively each activity is contributing to progress across participating universities. While assessing how change has occurred, if at all, the evaluation team also used *beneficiary* assessments in its interviews with stakeholders to understand beneficiaries’ perceptions of the value of BUILD-IT activities and interventions.

Additional details on the evaluation design and implementation, including how the evaluation team applied content analysis, contribution analysis, and beneficiary analysis; selection of key informants; and data collection, coding and analysis, are provided in **Annex II**.

Limitations

The team approached the evaluation with as much methodological rigor as possible, though there are certain limitations which may have an impact on findings. Ideally, qualitative inquiries should be based on prolonged investigation in the field. Resource constraints limited this possibility. Potential limitations to consider include:

Inability to Demonstrate Attribution. Since the evaluation did not include a counterfactual (control/comparison group) as part of an experimental or quasi-experimental design, the findings do not

² Maxwell, J. (2013). *Qualitative Research Design: An Interactive Approach*. Los Angeles: SAGE Publications.

support strong causal inference. Thus, it is not possible to rigorously determine causality for identified outcomes.

Project Timeline. Though the project is in year 2 (Y2) of implementation, activities intended to develop the capacity of partner universities started late in Y1. Because many of those activities are still in process, and because systemic change can take time to materialize, outcomes have not been fully realized. Initial activity implementation only began in the final quarter of Y1, and the key activities that were underway at the start of the evaluation only began several months earlier.

Assessing Sustainability: Not all project activities have been fully launched at the universities, and most activities that have launched are still midway through implementation. Therefore, answers to evaluation questions related to sustainability are not part of the main report, but are presented in Annex VII, and describe the likelihood of sustainability based on stakeholder perceptions. Since the sustainability of an intervention can only be verified ex-post, the methods used to assess sustainability focused on factors that would theoretically contribute to the sustainability of the intervention.

Respondent Bias: Key informants constituted the primary source of information in answering all evaluation questions. Although the evaluation team triangulated as much of the data as possible, interview data is subject to cognitive biases, including recall bias. To strengthen the validity and reliability of the findings, the evaluation team systematically triangulated data from interviews, documents and observation; used the constant comparative method, follow-up thematic interviews and validation workshops; and made its best efforts to select an appropriate range of interview participants. These measures reduced the potential for bias across the research.

Reaching Key Informants: Each of the universities involved in BUILD-IT are different in terms of focus, needs and resources. The evaluation scope did not require the evaluation to deeply investigate institutions individually. Nonetheless, the team made rigorous and repeated attempts to reach out to as many project stakeholders as possible, based upon the stakeholder list provided by the project. This included government, academic and industry partners. Particularly within universities, the team worked to secure interviews with as many internal stakeholder groups as possible, including leaders, senior administrators, quality assurance staff, faculty and students. Despite this effort, a few universities—especially in the North—were less willing to allow these multi-level stakeholder meetings than others.

FINDINGS AND CONCLUSIONS

The evaluation yielded a total of 24 findings. For quick reference, these may be found in Annex III. Following are the findings, evidence and conclusions for each evaluation question and sub-question.

Question 1: Achieving Planned Results for the Three Project Objectives

Question 1: To what degree is the project on track to achieve planned results at goal level and within key areas: (a) strengthen higher education policies; (b) enable university-private sector collaboration; and (c) improve academic learning programs and learning outcomes? How sustainable are the results expected to be after BUILD-IT's completion?

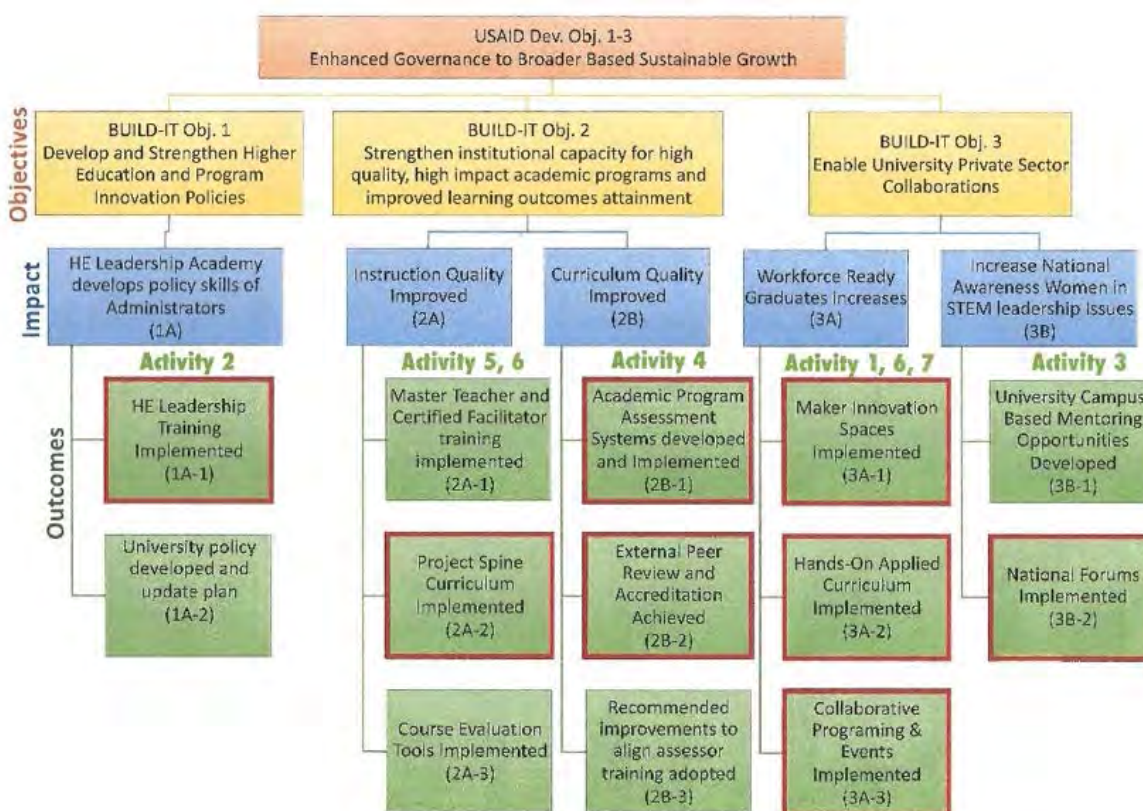
In its quarterly and annual reports, the implementing partner reports progress on all of the following eight project activities launched in Y1 and/or Y2:

- A1: Increasing Private Sector Engagement
- A2: Leadership Development for Effective Policy Makers

- A3: Leadership Development for Women in HE-STEM
- A4: Developing Quality Systems, Accreditation, Training and Support
- A5: Improving Instructional Quality
- A6: Implementing Curricular Innovation: Project Spine
- A7: Maker Space Network
- A8: Establishing HELIX

At the start of the evaluation, the implementing partner held a briefing with USAID and the evaluation team. The evaluator then captured reported contributions to the major areas of the results framework boxed in red in Figure I below.

FIGURE I: BUILD-IT RESULTS MATRIX



In accordance with the BUILD-IT M&E plan jointly developed by ASU and the USAID AOR, in Y1 the project tracked 10 key performance indicators. Beginning in Y2, this list was expanded to include four overarching key performance indicators in addition to the original 10 project indicators. The complete list of indicators is provided in Annex IV. Data for indicators have been tracked beginning with Y1 Quarter 4 (Q4), which corresponds to the launch of related events. Since then, the project has reported against eight of the 14 indicators (with the remaining to be activated at various points later in project implementation). The reported indicators and the performance achieved as of Y2 Q2 are indicated in table form following the appropriate related sub-question.

(a) Strengthening Higher Education Policies

BUILD-IT Objective 1 focuses on developing and strengthening higher education and program innovation policies. The primary vehicle for achieving this objective is the Higher Education Leadership

Academy designed to develop the policy skills of administrators. Three key performance indicators are used to report progress on this objective, and the project has reported against two of the three. Table I details the performance results for these indicators.

TABLE I: PERFORMANCE RESULTS FOR STRENGTHENING HIGHER EDUCATION POLICIES

No.	Performance Indicator	Annual Performance Achieved YI	Y2 Q2							Meets Target Y/N
			Y2 Q2 Target Total	Actual Achievement Total M F			Aggregate Performance to Y2 Q2			
5	Number of executive leaders trained	137%	40	29	11	33	28	5	83%	In process ³
6	Percentage of participants who are prepared to develop and update university policy due to training	77%	80%	56%			70%			In process
7	Percentage of participating institutions who publish new or revised institutional policy documents (meets or exceed policy training criteria)	0	0	0			Activates Y2 Qtr 4			-

Finding 1: The project is advancing steadily in implementing Activity 2 (Leadership Development for Effective Policy Makers) under Objective 1. Needs have been assessed and universities are engaged around developing policies to meet what the project calls the “wicked challenges” identified by the assessment and confirmed by university leaders.

Evidence:

- The project conducted a University Executive Policy and Leadership Needs Assessment in Y1. The report was finalized on June 18, 2016, and identified three core challenges confronting STEM higher education institutions in Vietnam:
 - Lack of resources for policy implementation;
 - Lack of high-level coordination for policy reform and innovation; and
 - Vague legal framework for higher education.
- Following the assessment, university leaders attended a Kick-Off Executive Leadership seminar held September 6-9, 2016, where the policy and leadership team lead presented five “wicked

³ The descriptor “In Process” comes directly from the charts used by the implementing partner in quarterly reports to report progress to targets for each indicator. It reflects interim progress towards achievement of annual targets for Y2.

challenges confronting universities. These challenges formed the starting point for developing the policy capacity of universities:

- Balancing quality of education with the quantity of students;
 - Gradually increasing university autonomy while demonstrating accountability;
 - Improving university research output with limited resources;
 - Enhancing overall university quality with constrained budgets; and
 - Competition among universities for high-quality students and workforce-ready graduates.
- Interviews with the project team and USAID representatives indicated the Kick-Off Executive Leadership seminar was well attended by university rectors and vice rectors.
 - Interviews with the project team and USAID representatives further indicated that university leaders generally agreed that the “wicked challenges applied to all their universities and they engaged in a good strategic discussion about the challenges. Individual universities prioritized the challenges differently, but all concurred on their validity. The challenges form the foundation of the Leadership and Policy Development workshops that were launched in Y2 of the project.

Finding 2: The project reported exceeding its Y1 target for executive leaders trained. In Y2 it is still working towards achieving its annual target. The project team has made an effort to increase and focus on university participation in the policy workshops.

TABLE 2: PERFORMANCE RESULTS FOR NUMBER OF EXECUTIVE LEADERS TRAINED

No.	Performance Indicator	Annual Performance Achieved Y1	Y2 Q2							
			Y2 Q2 Target Total M F			Actual Achievement Total M F			Aggregate Performance to Y2 Q2	Meets Target Y/N
5	Number of executive leaders trained	137%	40	29	11	33	28	5	83%	In process

Evidence:

- In the Y2 Q2 report, the project reports the number of executive leaders trained as part of Objective 1:⁴
 - The project achieved 137% of its Y1 target for this indicator.

⁴ The project provided the following update to attendance data as a response to the evaluation draft (since the Q3 report has not been finalized, the data has not been verified): *It should be noted that Y2 Q3 participation exceeded the quarterly target (43 actual) bringing the aggregate percent of target achieved through Y2 Q3 to 95% of expected. Note also that the raw number of female participants increased as well. Also in Y2 Q3, ten of the partner institutions were engaged in the A2 activities including workshops and coaching sessions. One institution that had been previously been absent explained that changes in leadership has shifted the focus of BUILD-IT activities to a different campus and they were now in a position to engage.*

- As a result of the Leading University Policy Identification seminar delivered January 9-11, 2017 under project Activity 2, the project is currently working towards its target for the total number of executive leaders trained. The project reports that it is still in process to reach its Y2 annual target for Indicator 5 by year-end.
- On a disaggregated basis and for both Y1 and Y2, the activity also fell short of its target for female leaders trained. The corresponding narrative in that report noted the need for additional effort to be made to encourage women in leadership roles to take advantage of executive leadership training sessions, although the project also deals with the reality that universities have few to no women in leadership positions from which participants can be selected.
- The balance of participation across universities varied, with four universities sending four to five participants each, while the remaining universities each sent two to three participants.
- The project made efforts during Y2 Q2 to increase its focus on policy development at the universities. Each rector was asked to sign a rector commitment letter identifying a policy innovation team, and the participants of the team would attend all policy workshops.
- Attendance records provided by the project following the Y2 Q3 Leading University Policy Formulation seminar delivered in May 2017 showed a total of 24 university participants, representing nine of 11 partner universities.

Finding 3: Participation by university leaders in the Activity 2 policy workshops is not at expected levels as stated in MOUs.

Evidence:

- The MOUs signed by each partner university are specific with regards to university participation in leadership activities:

“University’s Executive Leadership will actively participate in BUILD-IT executive leadership and institutional policy institutes, workshops and learning sessions. Five members of the university’s executive leadership team (rector and vice rector level) will complete the executive education component by 2017.”

 - A key informant interview with the lead for Activity 2 revealed that only one rector/vice-rector-level individual attended the follow-on Leading University Policy Identification workshop in January 2017.
 - When asked for their views on whether leadership and policy training in BUILD-IT met their needs, over 80% of the university leaders and senior staff interviewed noted that the workshop model presented challenges that made it difficult for senior leaders, particularly at the rector level, to attend. The challenges noted included difficulties spending three days away from the university, the distance and the inconvenience of traveling to attend the workshops, and the costs incurred by attending workshops held at expensive hotels. In short, they note that the workshop model of delivery does not align with the realities of their jobs.
- The rector commitment letters identified each university’s policy innovation team who were to attend all policy workshops. The project reports that universities were asked to identify 2-4 individuals to serve on these teams.
 - Actual letters indicated that some universities identified four to five participants, while others identified two to three participants. Additionally, eight commitment letters highlighted one or more vice rector-level members as part of the university’s policy innovation team.

- Nine out of 11 universities participated in the latest workshop; however, only six out of the 25 attendees were at the vice rector/vice president level. Review of attendance records indicated that other participants were deans, department heads, deputy heads, coordinators or lecturers. It would be difficult to place across-the-board expectations in this regard given that some of the universities consist of institutions such as the Vietnam National University (which has a variety of STEM deans but only one rector/president), whereas others consist of university leadership that's solely focused on STEM.

Finding 4: It is still too early to determine the impact of Activity 2 on publication of new policies or revision of existing policies at the partner university level (Indicator 7). Rectors are not participating directly in the policy development seminars as originally designed. Therefore, it is difficult to make a firm determination about the impact of training on participants' ability to develop and update university policy (Indicator 6).

Evidence:

- In the Y2 Q2 report, the project presents the self-reported efficacy of Activity 2 workshop participants to enact policy development or revision. The percentage of new participating partner universities that publish new or revised policy documents has not been reported yet.

TABLE 3: PERFORMANCE RESULTS FOR ACTIVITY 2 WORKSHOP PARTICIPANTS

No.	Performance Indicator	Annual Performance Achieved Y1	Y2 Q2		
			Y2 Q2 Target Total	Actual Achievement Total	Aggregate Performance to Y2 Q2
6	Percentage of participants who are prepared to develop and update university policy as a result of training	77%	80%	56%	70%
7	Percentage of participating institutions who publish new or revised institutional policy documents (meets or exceed policy training criteria)	0	0	0	Activates Y2 Q4

- Indicator 6 captures self-assessment data, with more than half of participants (56%) in the Leading University Policy Identification workshop reporting that they felt prepared to develop and update university policy. This result represents 70% achievement of the indicator target.⁵
- This result is a slight drop from the Y1 Q4 report for the same indicator, when 62% of those participating in the Kick-Off Executive Leadership seminar felt prepared to develop and update policy (representing 77% achievement). In addition to that report noting only a 51 % response rate

⁵ The following additional data and clarification was included by the implementing partner as a response to the evaluation draft, though it has not been verified: *Self-efficacy of participants continues to improve with Y2 Q3 data, increasing to 90% preparedness to implement. We believe that this supports our assertion that continued depth and experience in the seminars brings greater confidence and experience in these areas. It should be noted that the preparedness data reported is a percentage of respondents, not total participants, and aligns with the definition of the indicator.*

to the kick-off self-assessment, the project attributed the YI Q4 shortfall to the fact that the Kick-Off seminar was more introductory in nature. The report noted the expectation that the depth of future policy workshops would bring greater confidence and experience in the policy area.

- Key informant interviews conducted at universities indicated that perceptions of the value placed on the policy and leadership training activity of BUILD-IT were generally positive.
- Sixty-six percent of university leaders and senior managers highlighted the benefits they received from the workshops. Specific areas of value discussed included:
 - Teaching them how to identify and frame their policy needs and priorities;
 - Providing a forum where challenges could be discussed with fellow learners and foreign experts; and
 - Creating a coaching group of peers to support them as they worked to apply their learning once they returned to their universities.
- Of the four interviews conducted with representatives of the GVN, two were conducted with MoET. The MoET representatives expressed mixed views about whether training ultimately translates into an actual culture that results in concrete policy development:

“The collaborative sessions of the Kickoff Executive Leadership seminar helped deepen the leaders’ awareness of the new forms of governance needed in an era of greater autonomy.”

Conversely:

“There is disparity among university leaders about what autonomy does and does not mean for them. The current law does not fully define the boundaries, and many university leaders are unclear about the financial and professional implications. Leaders need to engage more with MoET around this issue while building their institutions’ capacity to operate autonomously.”

- The efforts of the BUILD-IT team to have rectors create policy teams appear to have had some good impact: The number of vice-rectors who participated in the May 2017 Policy Formulation seminar was higher (six). Nonetheless, the attendance levels at Activity 2 seminars are still low, and the overall seniority of participants is often below the vice-rector level. It should be noted that in some cases, however, the dean level is sufficient to capture STEM fields at large universities.
- Implementing partners recognize the ongoing challenge of getting senior leadership commitment. They feel this is primarily due to the time commitment required for seminars, and have tried to adapt to this reality through the identification of policy innovation teams. They also have adapted Activity 2 to include more “leading up” techniques, as well as coaching circles to build the confidence of seminar participants in leading policy formulation and engaging the senior leaders of their organizations.
- USAID said that getting a rector to attend is difficult and that this is understandable given competing demands, however this is mitigated by their successful delegation of responsible to deans and other staff. The activity lead also expressed concern that low rector engagement could impede attainment of project outcomes, since the university MOUs do not specify that universities must actually implement any new policies and that certain decisions are outside the mandate of the project and dependent on the GVN system.
- The MoET representative who co-facilitated the latest policy session noted that some universities do not appear to appreciate the realities of university autonomy. He feels action needs to be taken to “wake up” the university leaders—particularly rectors—to this reality.

Conclusions:

- The project is making a solid effort to develop the policy and leadership capacity of participating universities, though the success of these efforts ultimately depends on the universities themselves. More specifically, the success of these efforts depends on university leaders' support to steward change.
- The concern that the seminars are not reaching their intended target audience has potential implications for the sustainability of policy development capacity at the partner universities, though it is too early to make a definitive determination either way on sustainability. The underlying question is to what extent partner university leadership needs to be directly engaged with the policy development process.
- Currently, not all partner universities are engaging in the policy seminars. Though ongoing progress is being made in engaging partner universities and in developing policy capacity at the universities that do send representatives to the seminars, the ultimate impact of these efforts will likely vary by university, given apparent differences in level of institutional commitment. The levels of willingness to participate could also be used as a management tool to attain commitment on where the project will further focus its efforts and resources.
- The project has attempted to adapt to the challenges that university leaders say limit their ability to attend workshops, but there still appear to be obstacles to uniformly achieving the shifts in culture and leadership mindset needed to achieve sustainable change.
- Given that i) not all partner universities are participating in training, ii) the average level of participation is lower than targeted, iii) the level of rector support is unclear, and iv) it is not yet clear that training is translating into actual implemented policies, it cannot be argued definitively that on an aggregate basis the project is clearly on track to achieve Objective 1. Some individual institutions, such as the University of Technology and Education, appear to focus very strategically on the policy development process, and they are more likely than others to achieve results at the university level.

(b) Strengthening Institutional Capacity in Academic Programs and Learning Outcomes

BUILD-IT Objective 2 focuses on strengthening institutional capacity for high-quality, high-impact academic programs and attaining improved learning outcomes. Two areas of impact fall under this objective: 1) improvement of instructional quality, and 2) improvement of curriculum quality. Four key performance indicators are used to report progress on this objective. As of the Y2 Q2, the project has reported against all four. Performance to date for each indicator is addressed individually below.

Finding 5: On an aggregate basis, the project exceeds targets for personnel participation in quality, pedagogy, and curricular innovation training. Disaggregation of participation data on an institution-by-institution basis reveals very uneven levels of engagement by partner universities.

Evidence:

- In the Y2 Q2 report, the project reports the number of higher education personnel reported under Objective 2, as summarized in the table below.

TABLE 4: PERFORMANCE RESULTS FOR NUMBER OF HIGHER EDUCATION PERSONNEL REPORTED UNDER OBJECTIVE 2

No.	Performance Indicator	Annual Performance Achieved Y1	Y2 Q2							
			Y2 Q2 Target Total M F		Actual Achievement Total M F		Aggregate Performance to Y2 Q2		Meets Target Y/N	
8	Number of higher education personnel trained in quality, pedagogy, and curricular innovation	388%	80	58	22	289	186	103	289% ⁶	Y

- The project reports exceeding performance targets for this indicator based on actual achievement of 289 personnel versus a quarterly target of 80. This indicator combines training across multiple activities in the project, including Activity 4 (Developing Quality Systems), Activity 5 (Certified Facilitator Model) and Activity 6 (Project Spine). Since Activity 5 has not yet been launched, most of the training under Objective 2 has focused on quality systems and the curriculum spine. This reporting continues the trend begun in Y1, when the project reported significantly exceeding its performance target.
- MoET has issued official expectations for accreditation implementation at all higher education institutions. Based upon this expectation, universities have shown a strong interest in technical support as they prepare to meet their respective accreditation goals, and partner universities have shown a strong interest in the workshops offered through Activity 4.
- Although overall university attendance for quality assurance is high, participation levels are uneven across institutions. For example, across five events spanning Y1 and Y2 (including coaching), HCMC Industrial University and HCMC University of Technology and Education had a total attendance of 100 and 80 participants, respectively. By comparison, two universities had 42 participants each, while five universities had between 14 and 24. Two universities had fewer than 10 total participants each, namely XX, which could be an indication of their lack of willingness to participate in the project. The project alluded to this disparity in its most recent quarterly report when it recognized continuing challenges in achieving desired attendance levels, particularly with Hanoi-based partners.
- The very high participation by some universities is due to what the implementing partner reports is the much more “aggressive” approach some universities have taken to building capacity for quality assurance and accreditation.
- Analysis of similar attendance records provided by the project for Activity 6 (Table B in Annex V) indicates uneven participation in workshops. Across four events, one university (HCMC University of Technology and Education) had a total of 62 participants, two universities sent 32-33, two sent 13-14, and six sent fewer than 10.
- A review of university MOUs indicated that universities were expected to nominate 15 STEM faculty to participate in training in 2016, growing that number to 130 by 2019. There is no *explicit* mention of support to universities on how to embed training in a broader capacity development

⁶ The evaluation team has not been able to verify the performance level on this indicator.

plan. Therefore, given the current attendance trends, it is not clear how focused some universities are on that target.

- Participation in Activity 6 workshops appears to be stronger among former Higher Engineering Education Alliance Program (HEEAP)⁷ universities than non-HEEAP ones. The exception to this is Can Tho University, which has lower attendance levels than other former HEEAP universities. This may be due to the fact that Can Tho is geographically distant from the training venues in Hanoi and HCMC. Lac Hong University, which was not a participant in HEEAP, also has lower attendance levels. It is the only private institution involved in the project, and by its own admission it takes a more assertive view towards developing its institutional capacity.
- Interviews with project staff and with stakeholders from former HEEAP universities suggest that these universities seem to be more strategic in leveraging the opportunities available through BUILD-IT. Three of five of the leaders and senior staff from former HEEAP universities interviewed indicated that they learned a great deal through participation in HEEAP, and this helps them to be more purposeful in leveraging the faculty development opportunities in BUILD-IT.
- Several challenges to seminar attendance emerged from the discussion with faculty and other university constituencies:
 - Three of seven university leaders and senior officials interviewed noted that the project staff tend to have a primary contact point at each partner university, and communication regarding workshops tends to go through that individual. Interviews with the implementing partner confirmed this. In three of the five faculty interviews, faculty suggested that the project find ways to communicate directly with them so they are certain to learn about workshops and make their own decisions on attendance.
 - Four of the seven university representatives interviewed expressed frustration that at some points during the first year the project tended to focus more on filling the workshops and less on engaging the universities on their specific capacity needs and challenges. They seek a more targeted process in this area. To be clear, these comments focused only on event planning; they did not account for the coaching and direct institutional support that occur to support certain activities, such as quality assurance and policy development.
 - Faculty and university staff noted that internal challenges make it difficult to attend the workshops. In two of the five faculty interviews, participants noted that they are not incentivized to attend learning events, and often they are not able to make time in their schedules. They feel these are policy issues that the universities must address if they wish to create an environment for faculty capacity development.

Finding 6: The value placed on curriculum spine⁸ training is generally good, though some stakeholders report challenges in implementation. Inconsistent expectations about the purpose and target audience of quality assurance seminars has resulted in some dissatisfaction among stakeholders.

Evidence:

⁷ HEEAP is a former USAID-funded project in which five of the current BUILD-IT university partners participated: HCMC University of Technology, HCMC University of Technology and Education, Can Tho University, Da Nang University of Science and Technology and Industrial University of HCMC.

⁸ The curriculum spine in BUILD-IT refers to project-based experiential learning opportunities designed to involve industry partners.

- In the Y2 Q2 report, the project presents participants' self-reported preparedness to implement training, summarized below.

TABLE 5: PARTICIPANTS' SELF-REPORTED PREPAREDNESS TO IMPLEMENT TRAINING

No.	Performance Indicator	Annual Performance Achieved Y1	Y2 Q2			
			Y2 Q2 Target	Actual Achievement	Aggregate Performance to Y2 Q2	Meets Target Y/N
9	Percentage of participants self-reporting preparedness to implement training	102%	80%	80%	81%	Y

Indicator 9 captures the self-reported preparedness of training participants to implement what they learned in training. Eighty percent of participants self-reported their preparedness to implement learning, against a project target of 80%. The year-to-date achievement rate of 81% compares to 102% reported for Y1. The implementing partner clarified that the year-to-date achievement (81%) is derived by summing the total respondents from all workshops satisfying the data definition (those indicating that they are “adequately” or “very” prepared to implement), divided by the total number of survey respondents over the same workshops. In terms of progress towards targets for Y2 the project reports that it is currently slightly above the target percentage, a trend it anticipates continuing with programming scheduled for the remaining two quarters of Y2.

It must be stressed that these performance statistics are for participants *who attended* workshops and reported efficacy. Given the uneven participation levels exhibited by universities in workshops, this indicator does not necessarily give a full picture of the workshops' impact.

Qualitative data collected on university assessment of training activities are reflected below.

Quality systems events:

- Perceptions of the value of Programmatic Quality Assurance and Institutional Quality Assurance appear to split between university partners that participated in HEEAP and/or the Vocational and University Leadership and Innovation Institute (VULII)⁹ and those that did not.
- Universities that did not participate in HEEAP or VULII found the BUILD-IT workshops very valuable, though they felt it was still too early to see any impact on quality assurance activities related to curriculum and learning outcomes.
- Conversely, for quality assurance personnel at universities that participated in HEEAP or VULII, the general consensus was that the BUILD-IT workshops did not teach them anything new. They had already learned the content covered in the workshops. However, they did feel that the workshops helped build awareness of quality assurance for faculty who attended.
- Interviewees from two of the four former HEEAP universities found value in participating in the workshops, which gave them the opportunity to share their experiences in the ASEAN University

⁹ VULII was another USAID-funded activity, an extension of HEEAP. HEEAP universities and other stakeholders in Vietnam participated in the activity, which the HEEAP website describes as providing educational capacity-building and training workshops and support for multiple levels within the Vietnamese educational systems.

Network Quality Assurance (AUN-QA) and Accreditation Board for Engineering and Technology (ABET) accreditation processes as case studies.

- The implementing partner indicated that the project has been clear from the beginning that the quality assurance seminars draw heavily on what was done previously in VULII. The project invited all universities to attend, recognizing that for some it would be a refresher.
- The implementing partner reports that stakeholders from former HEEAP universities who are “aggressively” seeking accreditation have requested and received more tailored coaching through the project. Interviews with quality assurance staff from those institutions indicated that they welcomed the coaching, as it helped their institutions develop focus among faculty in such areas as student learning outcomes and curriculum mapping.

Project Spine events:

- In seven out of 11 interviews conducted with university leaders/administrators and faculty at partner universities, respondents who had attended workshops spoke positively about the opportunities the project provided for faculty development. It should be noted that interviews conducted with faculty were group interviews, and not all faculty in the groups had attended the Project Spine seminars. Indicative comments included:

“Workshops were very good, and I tried to use the techniques in my classes to make them more facilitative and project-focused. However, [it] is difficult as quite a few students are very resistant to the approaches. It would be useful for workshops to facilitate discussion on how to apply content to the Vietnamese context.”

“The workshops are interesting and gave me good ideas, but it is hard to make changes to the curriculum without policy changes to support us.”

“The Amazon Web Services workshop was very helpful and the content very useful, but ultimately it could not be implemented because the students needed an international credit card in order to set up an Amazon account.” (NOTE: When asked about this situation, ASU indicated that the issue was eventually resolved, though faculty across multiple institutions pointed out the obstacle.)

“Content covered in the workshops is interesting, but we are limited in our capacity to apply the knowledge as the university lacks the facilities.” (NOTE: This comment preceded discussion of the planned Maker Spaces.)

Finding 7: The initial accreditation results the project reports align with accreditation targets identified in the university partner MOUs. However, these achievements are not necessarily correlated to the accreditation training that has been offered through the project.

Evidence:

- In the Y2 Q2 report, the project reports on programs planning and achieving accreditation:

TABLE 6: PERFORMANCE RESULTS FOR PROGRAM'S PLANNING AND ACHIEVING ACCREDITATION

No.	Performance Indicator	Annual Performance Achieved Y1 (Baseline)	Y2 Q2			
			Y2 Q2 Target	Actual Achievement	Aggregate Performance to Y2 Q2	Meets Target Y/N
10	Number of STEM programs with developed and implemented CPI (continuous program improvement) for academic program assessment and evaluation	15	0	9 Activates in Y4	<i>9 programs ahead of planned</i>	Y
11	Number of targeted STEM programs achieving national, regional or international accreditation	15	0	9 Activates in Y4	<i>9 programs ahead of planned</i>	Y

- Indicators 10 and 11 are intended to activate in Y4 of the program; however, as of Y2 Q2, the project has reported nine programs “ahead of planned” for each indicator.
- Academic partner MOUs identify accreditation goals to be achieved by 2019. The number of programs listed as goals varies from two for some universities to 14 for others.
- Interviews with quality assurance personnel and other university staff indicate that former HEEAP universities already had evaluation and accreditation plans in place before BUILD-IT began. Quality assurance managers at these universities noted that development of curricula and improved instructional practices were the result of the prior programs. The impact of quality assurance activities in BUILD-IT has not been seen yet.
- The project does not claim a correlation between BUILD-IT activities and the outcomes reported. In interviews, the implementing partner confirmed that some accreditation plans were in place before the project commenced activities.

Conclusions:

- There is evidence that BUILD-IT is helping to strengthen institutional capacity for high-quality, high-impact academic programming, though there is an interesting split in the evidence. For Activity 6 (Project Spine), more individuals from universities that participated in HEEAP seem to be engaging in seminars. For Activity 4 (Quality Systems), participants from former HEEAP/VULII universities indicate that the content of seminars is not new. Participants from the non-former HEEAP/VULII universities see stronger value.

- The project is beginning to see some early success in accreditation targets being met, but given that some universities report that accreditation efforts commenced before the start of BUILD-IT activities, correlation between the project activities and the results in this area cannot be assumed.
- Inconsistent engagement in training opportunities on an institution-by-institution basis raises the question of how engaged and strategic individual institutions are in their capacity development plans. There also appear to be some issues surrounding the degree of ownership universities take over their opportunities for growth and development under BUILD-IT.

(c) Enabling University-Private Sector Collaboration

Finding 8: University-private sector collaborations have started to provide opportunities that engage students (and faculty) in national competitions, Women in STEM advocacy, and hands-on learning.

Evidence:

- In the Y2 Q2 report, the project presents the number of higher education personnel reported under Objective 2:

TABLE 7: PERFORMANCE RESULTS FOR NUMBER OF HIGHER EDUCATION PERSONNEL REPORTED UNDER OBJECTIVE 2

No.	Performance Indicator	Annual Performance Achieved Y1	Y2 Q2							
			Y2 Q2 Target Total M F			Actual Achievement Total M F			Aggregate Performance to Y2 Q2	Meets Target Y/N
12	Number of STEM students participating in hands-on, project-based curriculum	-	0	0	0	142	91	51	Activates in Y2 Q3	-
13	Number of students and faculty participating in Women in STEM initiatives	563%	0	0	0	76	30	46	Activates in Y2 Q3	In process
14	Percentage of female participants reporting confidence in perceived ability to enter/complete STEM programs	-	0%			Activates in Y2 Q3 53%			68%	In process

- The three indicators that fall under BUILD-IT Objective 3 (enable university-private sector collaborations) are not intended to activate until Y2 Q3. However, the project reported some initial achievement in all three areas since the beginning of Y2. The PIRS (Performance Indicator Reference Sheets) for Indicator 12 indicate that results are collected from semi-annual reports provided by partner universities.

- In its Y1 Q4 report and Y1 end-of-year report, the project reported achievement of 563% for indicator I3 (students and faculty participating in Women in STEM activities). The report indicated that, “participation in Women in STEM initiatives exceeded the YQ Q4 [sic] target through the *Women in STEM: Women in Entrepreneurship and Innovation Conference* (Activity 3) in Da Nang.” Attendance records for that conference indicate that a total of 85 individuals from BUILD-IT universities attended the conference: 76 from Da Nang University of Science and Technology, and another nine from four other partner universities. Six partner universities did not participate since these events were planned to solely be for those who are located within the geographic area of the host institution, with a revolving arrangement throughout the country over the course of the project.¹⁰
- The partner university MOUs set a target that 500 students at each university “be involved in a form of project-based curriculum ... by 2017.” Because many of the project-based curricular activities involving universities are still in an early phase, it is difficult to make a reliable assessment regarding the degree to which BUILD-IT is on track to achieve results under Objective 3. The Maker Spaces have not yet opened. Furthermore, though not directly part of Objective 3, the Project Spine seminars have launched but are in an early phase. Additionally, the master facilitator training has not yet launched at universities. These are interconnected areas all critical to project-based learning.
- Through Activity 1, students had the opportunity to participate in a forum focused on introducing the use of maker spaces in applied STEM learning. Students were also invited to the National Instruments Innovation Design Competition for Young Entrepreneurs under Activity 6. For Women in STEM (Indicators I3 and I4), Activity 3 offered the launch of the Women Engineering Projects in Community Service (WEPICS) competition in January 2017.

The following table indicates a university-level breakdown of participation in university-private sector collaboration.

TABLE 8: BUILD-IT ACTIVITY PARTICIPATION*

Project Activity		A1	A1	A6	A3	A3	Total
Activity Name	Former HEEAP	Maker Forum	NI** Design	Robotics	WiSTEM***	WEPICS	
Date		11/16	11/16	12/16	8/16	9-12/16	
Danang University of Science and Technology	Y			*	*	*	3
Vietnam National University (VNU) – University of Engineering and Technology		*		*			2

¹⁰ The evaluation team struggled at times to verify some of the percentages reported as annual achievements (Y1) or quarterly achievements (in Y2) based on the raw numbers reported. The implementing partner was asked about some figures, and though the project provided clarification and in some instances made corrections to reported numbers, they questioned why the evaluation team was asking for such clarification as the figures had been verified by the project’s certified DQA (Data Quality Assessments) specialist. This issue was raised internally within MSI by the team lead, and it was confirmed that the evaluation should not be conducting DQA on the data, so further clarification of numbers was not sought.

Project Activity		A1	A1	A6	A3	A3	Total
Activity Name	Former HEEAP	Maker Forum	NI** Design	Robotics	WiSTEM***	WEPICS	
Date		11/16	11/16	12/16	8/16	9-12/16	
VNU – University of Science					*		1
Ho Chi Minh City Science				*			1
Posts and Telecommunications Institute of Technology (PTIT)				*			1
Lac Hong			*	*			2
Can Tho	Y	*	*			*	3
Industrial Univ HCMC	Y		*	*	*		3
HCM Intl			*		*	*	3
HCM U of Tech & Edu	Y		*	*	*	*	4
HCM U of Tech	Y		*	*			2
Universities Participating		2/11	5/11	8/11	5/11	4/11	

* Data Retrieved from Partner Meeting Reports, February – April 2017.

** National Instruments

*** Women in STEM

- The above table indicates uneven participation by BUILD-IT university students in the university-industry collaboration open to them.
- The Maker Spaces—a mechanism for implementing the hands-on curriculum—have not yet opened. Thus far, student engagement with the project has been primarily through participation in national competitions and the STEMCON conference in February 2017. For Women in STEM activities, opportunities for student engagement have also been through national competitions such as WiSTEM National Instruments conferences.
- Campus-specific activities to support Women in STEM are only in the discussion stage. The implementing partner reports that universities struggle with how to design and launch campus-specific activities and have asked for additional support in this area.

Finding 10: Universities appear to struggle with some of the university-level Women in STEM obligations they have on the project. The project is seeking ways to guide partner universities to identify ways to collaborate on campus-level initiatives that will build support for women.

Evidence:

- With two exceptions, the MOUs with partner universities specify that the universities will strive to have 10% female enrollment in each of their STEM programs by 2020.

- The MOUs also specify that the universities will launch initiatives to incentivize women to pursue STEM careers.
 - Thus far, much of the project work done for Women in STEM has been at the national level. University-specific initiatives have yet to be realized.
 - Evidence suggests that universities struggle with this target. A representative of the implementing partner noted that as the project has become operationalized, universities have expressed concern with trying to achieve 10% female enrollment in *each* STEM program; rather they seek to work towards that target as an aggregate across all programs. This concern was raised in half of the interviews with university partners. They said that because career paths for women are often heavily influenced by the individual's family, recruiting women for each STEM career path presents greater challenges than the universities themselves can address.
 - In a follow-on interview, the implementing partner indicated that it is working with universities to focus them on establishing processes to support the targets rather than just the targets themselves. The goal is to help the universities build a culture that encourages them to draw females into STEM careers, even if some of those career paths are historically unusual in the Vietnamese context. Shifting the focus from hard targets to a broader emphasis on cultivating a university-wide Women in STEM culture would better serve the project.
 - Women in three of five faculty group interviews noted that although they do not perceive obstacles to advancement in STEM, explicit initiatives to support women on campus are few. The implementing partner noted that partner universities desire more specific support from the project in identifying mechanisms for supporting women on campus.
 - Three out of five group interviews with students stirred debates between men and women. Women spoke of the challenges they face, while men tended to not see a problem. Both sides seemed open to opportunities to engage around such issues further. This is an opportunity that the project may wish to explore.
 - In five out of the six interviews conducted with industry partners, respondents expressed a willingness to support work with students around issues of gender. Several of these also expressed the desire that efforts towards gender equality engage both male and female students. It is notable that many of the leading industry representatives are Vietnamese women. As one respondent noted:

“My observation is that efforts to support women in STEM through the project have taken on more of a ‘women’s club’ approach. To be effective, efforts must engage the entire university community.”

Finding 11: The implementing partners highlight the planned Maker Spaces as a key feature of the project that will provide students, faculty and industry partners with opportunities to collaborate around hands-on learning. Universities and industry partners seek more information about how the spaces will be integrated into the project given the limitations around the resource.

Evidence:

- Implementing partners interviewed consistently noted that the Maker Spaces are a distinctive feature of BUILD-IT and an innovative programming feature that will bring key project components together to enhance the workforce readiness of students. In the spaces, faculty will be able to work with students and industry partners to apply what they have learned from the

Project Spine and facilitator training they receive elsewhere in the project. Though implementing partners are frustrated by delays in getting the spaces equipped and open, they are confident that once they do open and students and faculty experience them first-hand, they will want to work in them regularly. (Note: As of August 2017, both are now operational.)

- University partners are less confident about the ultimate impact of the spaces, given that there will be only two spaces available (one each in Danang and HCMC), and these are expected to serve multiple universities involved in the project. In HCMC, the space will be near the two major universities that are most active, but the other university partners in the city will have to travel over 20 kilometers to the space, with no public transportation options available until the new HCMC metro opens in 2020.
- Faculty in three out of five interviews expressed concern about their ability to use the spaces consistently in programming since they must share the resource, though it is recognized that this was an intentional move on the part of USAID in order to better serve the urban innovator community as a whole rather than solely students and faculty; indeed, it's for this reason that the HCMC site is located in the Saigon High-Tech Park, in close proximity to industry colleagues. As one faculty member noted:

"The Maker Space will be difficult to use because it is not on campus. To be sustainable, it should be embedded in the university as a dedicated resource."

- University leaders and administrators sometimes had similar concerns:

"It will be a common property used by all universities, so we do not know what accessibility will be like. Will access be fee-based? Will users be able to use equipment but need to pay for materials? These are all questions that have not yet been clarified, so we cannot say how effective it will be in developing faculty and student capacity. We are not sure if faculty and students will have projects to use in it. In this regard, BUILD-IT needs to tell people how they can use the space. The project must help build demand for it."

- Four of the five industry partners also expressed some concern about accessibility. They are full supporters of the spaces, though they note that they have not yet seen specific guidelines governing how the spaces will be managed, how they will be integrated into programming, or a willingness to devise programming that contributes to their success:

"We know we will be participating from the programming side. Our main question, however, is how will the Maker Spaces fit into the program? Who will have access? Will it be open to the public as well? We still have not gotten answers on these questions. We have questions on how precisely the spaces will fit into the project as a whole, particularly that there [are] only to be spaces in two cities."

"For sustainability, curriculum should be developed to explicitly include the Maker Spaces, so their use will be ongoing. It is important not to take an 'if we build it they will come' mentality. The spaces need a well-thought out marketing strategy to build awareness and promote their use. To be effective and sustainable, the message has to be effective to help faculty and students understand why and how they would use the space. Marketing should therefore be explicit in such things as its linkages to the curriculum and that usage is free (assuming it is). There should be a bricolage or 'woodshop' element to the campaign that encourages students and faculty to get their hands dirty. Also, rules of engagement should be clear and fair. Students should have a reasonable chance of using the space. If they cannot use it without a faculty member present, there needs to be a way of encouraging the faculty to get involved too."

"Until we spoke [in the interview], I was unaware of the components of the program such as the Master Facilitation and the Maker Spaces. These are areas where they could definitely add

value. For our contributions to be sustainable, we would like ASU to speak to us about the different components of the project, so we can explore mutually how to integrate our products more broadly. In particular, we think they could help with the Maker Spaces and also with the Master Facilitator.”

- When asked about these perceived challenges, implementing partner representatives did not see a problem and consistently expressed their belief that demand for Maker Space use will likely exceed supply.
- USAID expressed some concerns about the spaces and questioned whether project participants will use them. Access is clearly an issue. The spaces are intended to be places where faculty and students collaborate, but USAID is not certain that faculty will use them, and it is not sure how much of a real driver the spaces are in the projects results framework.
- When asked about plans for the spaces, implementing partner representatives gave somewhat inconsistent answers. They stressed that management of the spaces was ultimately not the direct responsibility of the project, and that teams responsible for management will be identified shortly before the centers open.

Conclusions:

- The project has assembled a strong group of committed industry partners and has started to leverage these partnerships to provide opportunities for university stakeholders to enhance student learning, workforce readiness and opportunities for Women in STEM fields.
- Evidence from student interviews indicated that student awareness of BUILD-IT is currently very low. Though much of the project is not intended to directly engage students, given the project’s stated intention to improve workforce readiness by creating a dynamic innovation ecosystem of students, faculty, industry and government, there is an argument to be made that building student awareness and knowledge of BUILD-IT at universities is essential. Perceived needs around improved workforce readiness among students and other university stakeholders appear more conceptual than real. Faculty and students know that students’ soft skills in critical areas must be improved, but this is not perceived as a barrier to securing employment after graduation. Uneven perceptions of the implications of low workforce readiness as a need that the universities should address can affect the project’s ability to build critical momentum for institutional change at the level of universities.
- Interest in the Maker Spaces is strong among industry partners as well as universities, though there are some genuine concerns about how the spaces will function and how they will be integrated into programming. University and industry partners express concern that certain challenges may limit the impact of the resource.
- There are some strong pieces ultimately being put in place directly and indirectly for Objective 3, though they have not yet all been activated. There needs to be a clear and compelling roadmap of how they all fit together and why they will make a critical difference to learning and student development. For this reason, it is still too early to make a firm determination on the project’s efforts to achieve results in this area.

Question 1a: Assessment of Relevance of Theory of Change Causal Links to Achieving Results

Question 1a: To what extent are the theory of change causal linkages relevant to achieving the expected results?

The BUILD-IT Cooperative Agreement specifies that the project’s overall goal is “to establish a sustainable, industry-government-academic alliance that will invest strategically and collaboratively to create a dynamic innovation ecosystem engaging STEM students, faculty, industry and government.” Through collaborative dialogue, this alliance is intended to innovate in six areas: institutional policy, student learning platforms, innovation spaces, faculty instructional methods, experiential and applied curricula, and gender inclusion. These innovations are intended to provide students with work-ready competencies to invent, build, and launch solutions and add value for Vietnam’s social and economic viability. To achieve BUILD-IT’s three objectives, a program approach has been designed to implement eight project activities supported by three innovative platforms: 1) Multi-Stakeholder Solutions Councils to support a Partner Advisory Committee; 2) a Maker Innovation Lab Network, and, 3) a Higher Education Learning and Innovation Exchange Portal (HELIX).

The framework in Figure 1 (page 5) illustrates how the eight key project activities are intended to support the three objectives. BUILD-IT’s approach is to support these eight activities by utilizing experts and partners drawn from industry, government and academia.

Finding 12: Implementing partners and USAID feel that it is too early to make a definitive assessment of the validity of the results framework given that all components have not yet been fully engaged.

Evidence:

- The project’s Cooperative Agreement specifies an underlying development approach that aims to promote transformative rather than transactional partnerships to foster trusting relationships among partners, specifically industry, U.S. and Vietnamese higher education institutions, MoET and other government counterparts to sustain inter-institutional and multi-disciplinary collaboration.
- The project’s Activity Monitoring and Evaluation Plan states that BUILD-IT’s guiding development hypothesis or theory of change is that by engaging partners from these sectors at the strategic level, BUILD-IT ensures industry’s active voice and investment, driving decisions and the implementation of new curriculum design; engages government and university leaders for policy reform; and promotes inclusive engagement of all partners in solutions across the eight activities.
 - When asked to offer their perceptions of the ongoing validity of the results framework as the project unfolds, representatives from the implementing partner indicated that it was still too early to make a definitive determination on validity. Though there have been some implementation challenges as the project gets started, the implementing partner feels the framework is still valid. As the project progresses and all activities are implemented, assessment of validity may change. Additionally, one representative of the implementing partner noted that the fluidity of the policy environment for higher education in light of changing laws in Vietnam may also have an impact on validity over the life of the project.
 - Though USAID interviewees said that the framework might be too modularized, since the “wheels are turning, but not all of them yet,” it is difficult to make a definitive assessment on validity and competency building at universities. They also noted that the framework may not always smoothly align with one another, since other USAID requirements influence a framework’s structure. For example, USAID pointed out that though activities supporting Women in STEM may not necessarily be directly related to university capacity development, they are in the framework because the Agency advocates for them.

Finding 13: Comparison of the results framework to descriptions in project documents and data emerging from key informant interviews with other stakeholders suggests there are several areas of the framework that should be reviewed at this early stage of implementation.

Evidence

Workforce Readiness

The Cooperative Agreement notes that the six innovation areas of the project are intended to provide students with work-ready competencies to invent, build and launch solutions and add value for Vietnam's social and economic viability.

- In the results matrix, workforce readiness is positioned under Objective 3. Though this placement stresses the critical connection between workforce readiness and engagement with industry partners, it does not explicitly link to the impact that improved curricular and instructional quality have on preparing workforce-ready students. It also does not have an explicit link to the interconnection between policy development and instruction, curriculum and gender issues.
- Interviews with representatives of the lead implementing partner indicate that a more global view of workforce readiness implicitly informs implementation across different project activities, though it is not explicitly indicated that way in the results framework.
- The implementing partner indicated that constraints on due to the way USAID expects results frameworks to be presented made it impossible to place workforce readiness above the three objectives, thereby where it would show visually the linkage to each of the three project objectives.
- As previously noted, though students and faculty see a need to improve student soft skills to enhance their workforce readiness, low workforce readiness is not seen as a detriment to students getting jobs. As a MoET representative indicated, students focus more on the credential than the skills training behind it.
- When asked to discuss ways to improve STEM students' workforce readiness, university stakeholders (faculty and administrators) and MoET representatives consistently defined the issue in terms of the need to place students in internships. They did not focus on curricular or instructional innovation, such as that underway in BUILD-IT, as a pathway to improving the workforce readiness of graduates.
- Explicit placement of workforce readiness lower down in the framework may inadvertently reinforce entrenched university and MoET perceptions on how readiness should be addressed.

Lateral Integration

Another area where the results framework can be strengthened to reinforce causal linkages in the theory of change is in the lateral integration of activities, impact and objectives. The project documents discuss creation of a dynamic innovation ecosystem, though the results framework presents the different components of the project in a more hierarchical manner that under-emphasizes interconnectedness.

- As noted above, USAID raised modularization as a potential weakness of the framework. USAID also noted that although it is happy to have the Maker Spaces in BUILD-IT, it is not certain how much of a real driver it will ultimately be in the project's results framework since they're designed to be a community resource rather than a targeted support for universities.

- Interviews with implementing partners revealed their concern about the integration and focus of the project, including how it does/does not support workforce readiness.

“There are so many different pieces to the project. The institutions are just not that robust, so it is difficult to get them to focus on everything and engage.”

“USAID does not have a clear vision of where it wishes to go in the project, and as a result, the project itself is somewhat unclear of where it is going. There was no clear vision in the RFP [request for proposal]. Right now, the project seems to be an assembly of different initiatives from different funding sources, consequently it comes across as diffused and lacking focused purpose.”

“USAID does not have a clear definition of workforce readiness that can fit into the project. The project struggles with how to measure workforce readiness, since the direct focus is not on student outcomes. The causal linkage in the RF [results framework] is long to workforce readiness, partially due to the fact that USAID does not appear to have a definition of workforce readiness. When we discussed with USAID, the definition provided focused on individual efficacy.” (NOTE: USAID definition of workforce readiness is provided in the executive summary of this report, and can be found at http://pdf.usaid.gov/pdf_docs/pdact461.pdf)

Conclusions

- Making determinations on the validity of the results framework and the theory of change for a project where critical components have not yet been implemented is a challenge. Assessment can be made only on perceptions of validity rather than on empirical evidence of how the project is operating in practice. At the university level, there is not a critical mass of experience with the project and its various components to observe and assess actual change against the framework.
- Nonetheless, project stakeholders should not just take a “wait and see” stance to assessing the validity of the BUILD-IT results framework. Initial evidence suggests that a clear and precise definition of workforce readiness as it relates to the project and its components is an area where work needs to be done to strengthen the framework. This involves more than just placement of workforce readiness in the framework, but also addressing why improved workforce readiness should matter to students, and how the universities can facilitate that improvement. This is not just the responsibility of the implementing partner, but also USAID. Government and industry partners should also be engaged in this process.
- Additionally, deeper discussion is needed of how the different objectives and the components that support them should fit together in achieving results. There are many parts to BUILD-IT. In order to achieve change in the universities and STEM education overall, it is critical for there to be a coherence to efforts that universities can implement and absorb. Deeper, more explicit integration of efforts can strengthen the results framework, but USAID must be clear on what it expects the project to achieve.

Question 1b: Program Activities Contributing to Expected Results

Question 1b: How are the program activities contributing to the expected results? What are the reasons behind successes or shortfalls, if any?

Finding 14: Assessing activity contribution from the perspective of actual university attendance at activities gives a different perspective on activity contribution to results at the university level. Also, the project appears to take more of a coordinated approach to activity implementation that makes it difficult to identify and address the specific implementation challenges of partner universities.

Evidence

As previously noted, the project reports that it has made progress on each of the eight project activities, though it has achieved varying degrees of university engagement.

Activities have been implemented in each area of the results framework, but to evaluate the degree to which these activities are contributing to results, it is important to also consider the impact that the activities are having on the capacity development of individual universities involved. Some activities have been implemented but have not yet reached the stage of direct engagement of universities.

- Attendance at some workshops has been skewed towards a limited number of universities that send a disproportionate number of participants to the events. Other universities send far fewer participants, if any at all. As a result, the contribution of activities to each university's institutional capacity varies significantly. Consideration of this factor, as well as interview data that revealed the perceived benefit to the stakeholders targeted by the activities, offered a somewhat different view of the actual contribution of activities to expected results.
- Table 9 below analyzes the contribution of various activities to expected results. ***It takes primarily a temporal view***, indicating to what degree the project has reached a critical mass of relevant stakeholders at multiple institutions. Such determination considers the number of events offered under the activity, the number of institutions participating, and the number of individuals participating from each institution. It also considers qualitative data on the perceived value of activities. At this stage of the project's implementation, the evaluation team views activities as contributing the most to results if they have offered more events, secured the greatest number of participating universities, and brought in the highest number of attendees from universities.

Using this approach, the team has put the contribution of events into four different bands:

- Moderate contribution
 - Early contribution
 - Initial contribution
 - No contribution
- Because the project is only midway through Y2 and no activities have been completed, none of the activities have yet been classified as making an advanced contribution. Activities that are in process and have been front-loaded to achieve outcomes in the earlier years of the project are reported as making a moderate contribution. Those that are in process but will last over a longer time span of the project are reported to be making an early contribution. As these activities continue over the life of the project, their contribution will grow. Those activities for which an initial event has occurred are listed as making an initial contribution. Finally, no progress is reported in the area of Maker Spaces as they have not yet opened. Furthermore,

though two “Maker Movement” forums took place in November 2016, attendance records show that only two universities participated (19 participants from Can Tho University and six from VNU Hanoi – University of Engineering and Technology), pointing again to the need for BUILD-IT staff to move to the universities themselves rather than attempting to convene them at off-site locations. From the perspective of university capacity development, it is hard to make a case that Activity 8 has started to contribute meaningfully to results at the university level.

TABLE 9: ASSESSMENT OF ACTIVITY CONTRIBUTION TO RESULTS (FROM PERSPECTIVE OF ENGAGEMENT OF UNIVERSITIES)

Activity	Assessed Contribution	Evidence
A1: Increasing Private Sector Engagement	Early progress	Some industry partners engaged in Project Spine training. One Solutions Council meeting held and STEMCON engaged them as speakers and facilitators. Partners interviewed seek more information on project implementation and opportunities for direct engagement with universities.
A2: Leadership Development for Effective Policy Makers	Moderate progress	Kick-off seminar and two policy/leadership seminars held. Policy innovation teams created. Not all universities participating. Question regarding seniority of participants from some universities to effect change. Rectors not uniformly engaged in activity. Not yet clear evidence that activity is translating yet into published policies, though this process takes more than a year and a half.
A3: Leadership Development for Women in HE-STEM	Early progress	National-level conferences and competitions launched for first year. University-specific initiatives now being planned.
A4: Developing Quality Systems, Accreditation, Training and Support	Moderate progress	Multiple workshops held. University participation uneven but solid. Different perceptions of value of content based on past involvement in HEEAP/VULII. Some universities report initial accreditations received but for programs in process before activity began. Not yet clear evidence of impact of activity.
A5: Improving Instructional Quality	Initial progress	Activity being developed and universities asked to identify initial candidates for training. Training not yet started.
A6: Implementing Curricular Innovation: Project Spine	Early progress	Multiple events offered, but university participation very uneven. Feedback from participants good, but activity not yet engaging critical mass of faculty across all universities. Some reports from faculty of challenges in applying learning in classroom. Impact of activity interconnected to other activities that have not fully launched (A5 and A7).
A7: Maker Space Network	No progress (still in planning)	Planning for two Maker Spaces continues but spaces not yet opened. Two Maker Movement forums held in November 2016, though only two universities participated. Industry partners very interested in being involved but seek more information on how spaces to be integrated into curricular activities at universities.
A8: Establishing HELIX	Initial progress	Portal described at STEMCON in order to seek feedback. Interviews with university stakeholders indicated low awareness of resource.

- Finally, evidence suggests that the project takes a coordinated approach focused on securing partner university participation in activities. Four out of seven of the partner university leaders and senior administrators interviewed indicated that the project sometimes places too much emphasis on coordination of activities and not enough on trying to collaborate with them to understand and target activities to their actual, rather than perceived, needs. Illustrative comments include:

“ASU made the plan for six months and sent it to us. We could comment on time, location... but were not involved in the development of the plan.”

“The project can be less regimented in participation in learning events. There should be more flexibility. We are frustrated by the fact that everything is already planned in advance and restricted in budget. We would like to be involved a bit earlier in the planning process.”

- A member of the implementing partner team made a similar comment, indicating that activities would be more effective if they could focus on the needs of individual universities:

“I do not make plans or design activities, but I wonder if one program can meet the needs of all institutions. If I could I would provide more support for individual institutions. It would be a more effective approach.”

- To be clear, the project has indicated that it facilitates support for universities through peer coaching circles whenever ASU/CUA/PSU faculty are available to travel to Vietnam in order to support application of learning in Activity 2 (Policy) and Activity 4 (Quality Systems). Additionally, it has offered direct support to institutions in quality assurance and accreditation. Finally, it has also noted that it is starting to help universities identify ways of supporting campus-based Women in STEM activities (Activity 3).
- However, there appear to be challenges around some universities’ ability to strategically embed activities into a plan that meets the distinctive needs of the institution. Implementing partners recognized that this is a challenge, but they also expressed that this is ultimately not the project’s responsibility:

“The success of implementation largely depends on the schools themselves. Some are very focused and are running with it. Others are scattered, and haven’t gotten traction. Some rectors have not stepped up and produced what they need to do for the project to work there. In those institutions, it’s not the project’s responsibility to go in and run the place. They need to take ownership.”

“One challenge is at the mid-level of the project. We work to train mid-level managers but these individuals are promoted or move on, and the capacity gap is opened again. Particularly with new partners, some universities do not seek collaboration with other universities, but want benefit as individual institutions. At times it seems that some of those institutions are trying to offload work onto the project, [and] expect support to be on a one-to-one basis. They don’t attend workshops but want the support from ASU delivered to them through coaching, or workshops customized to their needs in various areas.”

Conclusions

- The project is making steady progress in implementation across all eight activities. Some of this progress is in the area of planning and has not yet reached the stage of direct contribution to results at the partner universities. Other activities have more directly engaged universities. Assessing activity contribution towards results at such an early stage in a project is difficult, but evidence suggests that there has been moderate progress engaging universities in some activities

as well as early and initial progress in others. For activities in the second year of a five-year project, moderate and early progress are reasonable achievements.

- Timing of activity implementation is currently the key determinant of progress of contribution to results. The contribution of activities to expected results also varies across universities. Commitment to and participation in the project activities are also key determinants.
- Activities may be necessary to achieving project results, but they are not necessarily sufficient to achieving those results. Training can lead to improvement in capacity, but the distinctive strengths and challenges of the individual universities ultimately determine whether that capacity is translated into higher-level results.
- BUILD-IT's primarily top-down view of activity planning based on availability of US-based faculty may impede achievement of results at individual universities, particularly if those universities face institutional challenges to building capacity to achieve change. A top-down view of activity planning through workshops that don't sufficiently engage BUILD-IT's Vietnamese staff team appear to limit the potential contribution of activities towards results at some partner universities.
- Though the project design indicates that the implementing partner is not expected to take a deeply consultative approach to building capacity at the institutional level, the question arises whether the top-down coordinated approach to offering activities is sufficient to results achievement or if some bottom-up effort is also needed to focus on challenges to capacity development at the level of individual partner institutions.

Question 1c: Sustainability of Project Results

Question 1c: What conditions are needed to ensure sustainability of expected results? Is there evidence that these conditions exist or are in the process of being established?

As noted above, a number of activities under the project have yet to be launched comprehensively, and most activities that have been launched are still midway through implementation. In addition, various project activities build off of each other. It is too early, therefore, to make determinations of sustainability. In terms of the contribution and value of activities to stakeholders who will ultimately effect change, only evidence regarding *perceptions* of future sustainability can be considered.

In light of this situation, no findings are included here. However, the results of the evaluation research related to this question are provided in **Annex VII**.

Question 1d: Sufficient Capturing, Monitoring and Reporting of Expected Results

Question 1d: To what extent are the expected results (at different levels) sufficiently captured, monitored and reported?

Finding 15: The project is reporting results in the manner requested by USAID at the outset of the project, while adapting reporting based upon further requests by the donor. Disaggregating results by partner institution and stakeholder can give USAID a more focused understanding of project successes and challenges as they emerge during implementation.

Evidence:

- The implementing partner initially reported on 10 indicators agreed upon with USAID. It has adapted reporting at the request of USAID by adding four higher-level indicators that will be reported against as the project matures and all activities are implemented. Indicators are reported on an aggregate basis, with some gender disaggregation for some indicators.
- The implementing partner reports that it captures disaggregated data for indicators that reflect the degree of participation of individual universities in the different workshops offered through the project (Indicators 5, 8, and, to some extent, 12). Though this disaggregated data is not directly reported in M&E reports, the document review revealed that it informs some of the narrative that accompanies the report. Explicit reporting of disaggregates would give a much more straightforward picture of achievement of results across the 11 partner universities.
- Interviews with implementing partners revealed that the project captures the names and departmental and institutional affiliations of activity participants. This information appears to be used for internal monitoring purposes, such as determining the seniority and function of participants. For example, monitoring of such data indicated that the level of participation in the leadership and policy workshops was *not* at the level the activity was designed to address.
- Based upon its monitoring of such data, the project has tried to adjust to the realities of university engagement by having rectors sign letters agreeing to identify and empower a core policy team so that they can participate in future workshops.
- For activities 2, 4, 5 and 6, the project captures and reports output data on number of individuals trained (Indicators 5 and 8). Outcomes are largely reported in terms of self-reported efficacy of participants to apply what they learn through project activities (Indicators 2, 6, 9 and 14, though it should be noted that Indicators 7 and 9 reflect more direct outcomes since they capture numbers of policies developed and STEM programs accredited.) Reporting on training outputs aligns with the majority of university responsibilities articulated in the MOUs; however, it does not give clear evidence on the degree to which sustainable change is being achieved at the level of individual institutions.
- The project tracks and reports the number of STEM programs achieving national, regional or international accreditation. The project recently reported results “ahead of planned” on this indicator.
- The quarterly reports include a section on lessons learned, but it focuses on ways to adjust project activities. Learning as currently reported does not focus on the larger systemic challenges of achieving sustainable change nor on how project resources such as multi-partner collaboration can be applied adaptively.

Conclusions:

- M&E has been designed and implemented to capture data for USAID reporting requirements. The project collects data in different forms to enhance its internal project management, but these forms are not directly reported to USAID.
- The current M&E reporting system limits the use of available data for a more focused understanding of project successes and challenges as they emerge during implementation
- Though the project reports learning at the end of the quarter, there is no explicit CLA agenda to focus the project on opportunities for cross-project ecosystem collaboration, continuous learning and ongoing adaptation.

Question 2: Multi-Partnership Approach

Question 2: How is the project multi-partnership approach (university partners, the private sector and GVN) facilitating the project's progress towards achieving the expected results?

Finding 16: The implementing partner has assembled an impressive group of academic, industry and governmental partners to support the project. Two of the three platforms meant to support the alliance—the HELIX Portal and the Maker Innovation Lab Network—are at earlier stages of implementation. The Stakeholder Councils have been launched, but they have been implemented differently than originally intended.

Evidence

- The Cooperative Agreement for the project states:

“BUILD-IT’s overall goal is to establish a sustainable, industry-government-academic alliance that will invest strategically and collaboratively to create a dynamic innovation ecosystem engaging STEM students, faculty, industry and government.”
- Further description from the Cooperative Agreement notes:

“...the BUILD-IT Alliance leverages deep and diverse government-industry-academic partners that share its goal of tightly linking STEM instruction to Vietnamese higher education institutions (HEIs) to the needs and capabilities of industry partners to produce graduates who can lead inclusive, technology-based growth.”

“The project approach is designed to support this alliance through three platforms:

 - 1. Four Multi-Stakeholder Solutions Councils to support the Partner Advisory Committee;*
 - 2. The Maker Innovation Lab Network; and,*
 - 3. The Higher Education Learning and Innovation Exchange Portal (HELIX).”*
 - In addition to the 11 partner universities included in the project, the implementing partner has secured the participation of local and multinational industry partners to support the project strategically and/or tactically through in-kind contributions. The following list is not comprehensive, but illustrates the types of industry partners that have been secured for the project:

• Amazon Corporation – AWS Educate	• National Instruments
• Autodesk	• Oracle
• eSilicon	• Pearson
• Evergreen Labs	• Saigon High Tech Park
• Intel	• Sen Group
• Meetech	• Siemens
• Microsoft	• Tektronix
• Mobifone	• Viettel
 - Annex VI provides details of the committed in-kind and cash contributions of industry partners to the project, based upon details found in industry commitment letters. According to the letters provided, a total of 14 industry partners have committed contributions totaling \$2,877,137. The cumulative value of all contributions is in fact higher, since some partners declined to provide a cash-equivalent value for their in-kind contributions.

- Starting in year 2, the project increased its indicator reporting to include tracking of the “Number of Dollars Leveraged in GDAs and Innovative Partnerships” (Indicator # 4.6.3.2-Z01). This figure includes cash and in-kind contributions, and is reported annually at year-end. For Fiscal Year 1 (FY1), the total number of dollars reported was \$168,840 against a target of \$147,204. The project has not yet reported FY2 actual though it has a target of \$132,211.
- The FY1 annual report indicated that the project was underspent in Y1 partially because of difficulties in purchasing equipment for the Maker Spaces. The project expected to make those purchases in Y2, but there were still purchase delays reported in the Q2 report.
- The project has also worked to engage representatives of the GVN through various channels. Engagement of governmental partners is evolving, since changes to the country’s higher education law have started a process of giving universities greater autonomy over internal management, particularly in the areas of policy, finances, quality assessment and recruitment. The project reports that the following parts of the GVN and its affiliates have been engaged in various efforts related to BUILD-IT:

ILLUSTRATIVE LIST OF BUILD-IT GVN PARTNERS

- | | |
|---|--|
| • Ministry of Education & Training (MoET) | • Committee for Culture Education, Youth & Children of the National Assembly |
| • Ministry of Industry & Trade (MoIT) | • Three Centers for Education Accreditation |
| • National Institute for Science and Technology Policy & Strategy Studies | • Ministry of Science and Technology |

Note: A deeper analysis of GVN involvement with the project follows under Question 2d.

The evaluation team learned the following about the three platforms designed to support the alliance:

Maker Innovation Lab Network (Maker Spaces)

- The spaces have not yet been opened, but the project reports targeted openings in spring/summer 2017. Implementing partners have agreed on locations for the two spaces to be affiliated with the project, and they are working with partners at those locations to prepare those spaces. Observation of each space by the evaluation team indicated that the space in HCMC (to be managed by Saigon High Tech Park) is prepared and ready to be equipped. The planned location for the space in Danang (to be managed by Fablab) requires construction that had not yet started at the time the evaluation team visited. The activity lead for the Maker Spaces activity reports that the project is exploring alternative temporary locations and will make a decision shortly on whether to open the Danang space in a temporary location.
- The project has also reported delays in equipping the centers due to challenges with the import process for equipment from outside Vietnam. Based on this, the project determined to purchase equipment in Vietnam, though this has increased prices of certain equipment.
- Four of six industry partners said that they are anxiously awaiting the launch of the Maker Spaces and look forward to collaborating with faculty and students in the spaces. In particular, they seek to engage directly with university faculty and students around solving real problems, and they would like to see evidence of how the Spaces are integrated in university curricula.
- Previously presented evidence related to the Maker Spaces indicated that awareness of the spaces was inconsistent among university stakeholder groups, though students and faculty

were interested in using the spaces once they learned about them. There are also questions about how the two spaces will be integrated into the project, given the locations and the fact that they must be shared by multiple institutions. The Y2 Q2 report notes that:

“As the two Maker Spaces move closer to a physical reality, the implementing partners are beginning to address the challenges related to staffing and operating the Maker Spaces. These challenges include staffing, maintenance, involvement of students and their faculty in using the Maker Spaces as part of their educational model and developing a business model that allow [sic] long long-term stability and operation of these spaces.”

Higher Education Learning and Innovation Exchange Portal (HELIX)

<https://builditvietnam.org/resources-toolkits>

- The Cooperative Agreement for the project describes the role that the HELIX portal is meant to serve as a knowledge sharing platform:

“The HELIX web portal will support the rapid adoption of educational innovation by providing educators, students, industry, government officials and employers, access to interactive educational assets, academic programs and course delivery, available scholarships, internships, apprenticeships and experiential learning opportunities and a community of practice for collaboration in research, teaching, and professional development programs.”

- The Y2 Q2 report confirms that HELIX was launched during the STEMCON event held in Hanoi in March 2017. The platform was presented to the BUILD-IT community through two different presentations at the event. The project further reports that it is continuing with active maintenance and support for the platform and has made improvements based upon feedback received from initial users of the platform.
- Four of six industry partners interviewed were aware of the HELIX portal but did not yet have experience with it. Two of those raised questions about the sustainability of the platform, specifically whether a separate portal is the best means to share content across the project.
- Faculty in four of the five group interviews conducted at universities did not have knowledge of the platform when asked about it, possibly because all the resources are in English rather than Vietnamese. The other faculty member noted that though he had heard about HELIX, he was unclear about its purpose and timeline for development.

Four Multi-Stakeholder Solutions Councils to Support the Partner Advisory Committee

- The Cooperative Agreement for the project describes the role that the four Solutions Councils are meant to serve in BUILD-IT:

“...the four Solutions Councils will draw upon interactions of higher education, business and government representatives for input, recommendations, and development of solutions and will lead the eight program activities detailed below, building on existing capacity through HEEAP and providing strategic leadership. The Solutions Councils will define action plans to create relevance and value for faculty and students for Vietnam. Our focus in STEM will increase the career pathways of these highly demanded graduates and better align them to those industry sectors seeking them.”

“The Partner Advisory Board and Solutions Councils will initially be co-led by a technical expert from ASU or our partner institutions...and a local, in-country industry leader promoting both innovation and relevance. Leadership of each council will transition to the Vietnamese co-chairs by Y2Q4.”

- Implementing partners noted that in practice the Solutions Councils are less formal than originally designed. The councils have been modelled on a structure that the implementing partner used in other projects, but the partners report that that structure ultimately proved too challenging to implement in the context of BUILD-IT. They said that university rectors expressed some resistance to sharing their institutional challenges in the plenary context of the councils. They also note that many of the industry partner representatives are not based in Vietnam, therefore making it difficult to secure their attendance. This latter point could not be supported by evidence from the industry partners; those interviewed who participated in the council had no problem with the semi-annual commitment involved, but they questioned the way the one council meeting they attended had been organized. A review of the agenda for the Solutions Council meetings in late February indicated that the bulk of the day was dedicated to presentations from ASU on BUILD-IT and HEEAP, as well as presentations on various initiatives involving industry partners. One hour was dedicated to the four Solutions Councils, with breakout sessions organized to discuss implementation-specific issues.
- When asked about the shift in the Solutions Councils, the project leadership responded that it did not see the change having a major impact on the project. The representative of USAID also indicated his belief that ASU has done a good job with these given that the main focus was STEMCON rather than this pre-conference session, though the implementing partner later noted that it had not discussed specifics of the change with USAID. Nonetheless, over 50% of the industry partners interviewed expressed some concern regarding the way the Solutions Councils operated. The following quote captures these concerns:

“We expected to be involved in the Solutions Councils in year one of the project, though we never heard anything. When the first Solutions Council took place before STEMCON, we were updated on the program and we appreciated seeing university participation. However, we had hoped to see a higher level of interest among universities for the different aspects of the project. There was little discussion of how universities would use curricula provided by the partners. Also, we expected to see more of the individual universities present work plans to the Solutions Councils. We would like to see how the universities are implementing plans, so we can collaborate with them around planning and execution. We are not entirely sure why things changed. We also hope for more direct engagement with the university partners. Having direct interaction will help the industry partners in their efforts to address university needs.”
- Following the validation workshop the evaluation team lead held with the primary implementing partner on June 7, 2017, the implementing partner provided follow-on documentation noting that in preparation for the upcoming inaugural Workforce/Industry Solutions Council meeting scheduled for June 20, 2017, a council charter had been developed and was under review by key BUILD-IT partners. It would be formally implemented at the meeting. This was encouraging news, for in an earlier interview the implementing partner had noted that a draft charter had been developed, though it was not certain that it had been implemented. The implementing partner further noted that each of the councils should operate differently, and that the project is working to find the right approach for each council.

Conclusions

- The implementing partner has assembled an impressive group of university, industry and governmental partners to establish an alliance that will invest strategically and collaboratively to create a dynamic innovation ecosystem engaging STEM students, faculty, industry and government. Three platforms are intended to support this alliance, and though all three have been started, each is at a different stage of implementation.

- The project is still in an early phase, so it is difficult to make definitive determinations on the full impact that the multi-partnership approach will have on project results. There are positive signs such as the interest of partners to engage directly with universities to promote curriculum development. There are also some potential challenges, such as questions regarding the needed level of engagement from MoET in the implementation of the project
- The change in the approach to the Solutions Councils appears to have taken away a critical and direct mechanism intended to align university-level change management efforts with the insights and contributions that industry partners are meant to provide. University leaders appear to be resistant to sharing their challenges with partners in the group setting of the councils, and the councils do not appear to be structured in a way that leverages industry expertise on the needs of the universities as they adapt their curricula to improve the workforce readiness of graduates. This shift appears to have weakened a key mechanism of strategic integration in the project.
- Industry partners are committed to helping the project achieve its goals and are excited to engage directly with universities, but that participation requires evidence that the project proactively manages their participation in ways that optimize their contribution towards results and a method would need to be identified for maximizing their contributions during short periods of time.

Q2a: Identifying and Involving University Partners

Question 2a: To what degree is the current approach effectively identifying and involving relevant and highly committed university partners?

Finding 17: In assembling a group of university partners from across Vietnam, ASU has leveraged the relationships it has developed through its past programs in the country, while expanding to include new institutions. Engagement tends to be stronger in institutions where the implementing partner has a relationship history.

Evidence:

- The project leadership reports that its guiding approach for identifying university partners was to work within the major national university systems and to try to cover the major geographical areas of the country. At the outset of BUILD-IT, USAID sought to move beyond engineering institutions to a broader STEM involvement. ASU was already working with the three major higher education systems in Vietnam: VNU in the North and South, Danang in Central Vietnam, and Can Tho in the Mekong region. They looked to expand within those existing systems. In addition to these universities, the project also included a private university (Lac Hong).
- A number of factors encourage universities to participate in BUILD IT:
 - As changes in the higher education laws in Vietnam have pushed autonomy down to the institutional level, the implementing partner reports that some friction has emerged between MoET and the universities. The new higher education law has introduced competition among the universities, and created pressure around accreditation (to make them more competitive).
 - Two-thirds of the senior university staff interviewed highlighted increased industry relationships as an area of priority for their institutions. They noted that one of the most appealing features of BUILD-IT was the opportunity to engage with industry partners.
 - Review of documents and interviews with universities revealed that as a result of ASU's history of working with engineering institutions in Vietnam and the expansion of BUILD-IT to

embrace STEM rather than just engineering institutions, universities involved in the project tend to fall into two general categories: 1) former HEEAP/VULII universities that have a history of formal collaboration with ASU, and 2) non-HEEAP/VULII universities that do not have this history. The differences between these two groups are summarized in the table below.

TABLE 10: DIFFERENCES BETWEEN HEEAP/VULII AND NON-HEEAP/VULII UNIVERSITIES

HEEAP/VULII	Non-HEEAP/VULII
Stronger engagement in BUILD IT	Engagement under development
History of formal institutional relationship with ASU before BUILD-IT.	No history of formal institutional relationship with ASU before BUILD-IT.
They tend to exhibit more advanced capacity (in certain areas such as accreditation).	Some exhibited higher capacity, while others were less focused.
They often referred to BUILD-IT as a continuation of HEEAP.	Science universities saw some aspects of the project as not applicable to their needs.
Stronger evidence of a clear institutional vision, as well as articulation of how BUILD-IT fit into that vision.	Individual instances of clearer institutional vision, but overall institutions less clear in articulating how the project fits into broader strategic vision
Stronger awareness of BUILD-IT and the developmental opportunities it is intended to provide.	Less robust awareness of BUILD-IT and the different opportunities it offers for development.
Sometimes expressed desire that parts of project be more aligned to their more advanced needs.	Sometimes expressed desire for more support in engaging their internal stakeholders around project.

- There are additional factors that have influenced universities' engagement:
 - Senior staff from the two science universities interviewed for the project noted that though they value the opportunity to participate in BUILD-IT, they feel that parts of the project are too focused on engineering and technology. The Project Spine and hands-on curriculum activities have some application to the basic sciences, but they feel the training is more directly relevant to engineering and technology fields.
 - The science universities also noted that the industry partners are from the engineering and technology sectors. Interviews with implementing partner staff around these issues revealed that the project is aware of this challenge and they consistently work to bring in cases and applications that will be of value to the science universities (e.g., a recent meeting with Dow Chemical). At the same time, they remain cognizant of the fact that they must keep an appropriate balance since most of the university partners are engineering/technology focused.
 - In the policy team report produced at the end of the latest workshop, just under half of the presenting teams highlighted building stronger relationships with industry as an institutional policy priority. Of these, only one discussed BUILD-IT's connections with industry as a resource in establishing such relationships.
 - The implementing partners report that they have sought to leverage the HEEAP/VULII and non-HEEAP/VULII distinction by creating situations in which former HEEAP universities play a mentoring role for other universities. To this end, they have invited some universities to

present case studies on their accreditation experiences, and they have also created “coaching circles” to supplement the activity workshops. These have proven effective in the accreditation and policy activities.

Finding 18: The implementing partner has identified and involved a strong roster of industry partners that appear very committed to supporting the attainment of project results. Partners are very interested in working with university stakeholders and look forward to their involvement in the ongoing implementation of BUILD-IT.

Evidence:

- ASU secured the commitment of various industry partners as part of the proposal process for BUILD-IT. Review of these partner letters of commitment as well as interviews with six industry partners from the project indicated that alliance partners offer two different types of support for BUILD-IT: 1) tactical support for project implementation through services and/or resources that support achievement of objectives, and 2) strategic input to guide the project through participation in the Partner Advisory Committee or Solutions Councils.
- From a tactical perspective, industry partners have been engaged primarily through training delivered as part of the Project Spine activities or in the various national competitions or conferences. Partners have also contributed resources including equipment, software and opportunities for organizational linkages. The six industry partners interviewed for the evaluation were clear in noting that they welcomed the opportunity to work directly with universities, particularly in training faculty and students. The industry partners meant to be involved with the Maker Spaces in particular expressed their excitement about collaborating in that area of the project, and look forward to the centers’ opening.
- Interviews with industry partners revealed the following perceptions of the multi-partner approach:
 - For those that recruit talent directly in Vietnam, the desire to improve the workforce readiness of graduates in STEM fields is the leading motivation for engagement in the project. As one partner with significant operations in Vietnam noted:
“Aside from the benefit the company derives from improving the workforce readiness of graduates of Vietnamese universities, we also view engagement with universities in this area as part of our corporate social responsibility in the country.”
 - Improving the workforce readiness of graduates not only benefits the industry partners directly, but also benefits them indirectly as the economy develops more broadly.
 - Partners that do not recruit directly in Vietnam also discussed improved workforce readiness as a motivation for their involvement in the project, though evidence from interviews suggests that that is a secondary motivation. The primary motivation is to expand the market for their products and services, though it is their belief that making their products available to universities will ultimately contribute to improved workforce readiness.
- Partners have raised some concerns about the approaches to the Solutions Councils, though the project team notes that the councils are evolving as they learn what best meets university and industry partner needs. Industry partners also consistently noted that communication with the project has improved significantly in Y2, largely due to some staff changes in the local team. Nonetheless, several respondents noted that having the strategic management for the project in the U.S. and the operational management in Vietnam creates delays in response times. Following are illustrative comments:

“There was no communication at all during [the] first year of [the] project, and that was a disappointment. It got to the point where we had to reach out and ask what was going on. We were unsure how our involvement would look. We felt it would have been nice to have a working roadmap with milestones of what our expected involvement would be. There has been more recent communication, which is good. Now we remain optimistic about future collaboration. We should also make clear that ASU is good at taking feedback.”

“There is a need to shorten waiting times for action. We feel that progress of BUILD-IT requires it to have dedicated resources. In fact, dedicated resources have been limited. ASU now has more staff, but they are more doers rather than thinkers. The new director is good but she is only partially dedicated to BUILD-IT. The local team does not have a high level of decision-making capacity. If they want to move faster, the local team should be elevated in competency and empowered.”

“The project is managed well from Arizona, but the local team is weaker. It’s tough to get thorough and timely answers. Things are constantly referred back to ASU in Phoenix.”

“Communication needs to be standardized more than it currently is. Email is not the ideal means of communication. There needs to be a more collaborative system, and a more explicit effort made to demonstrate how the different parts of the project fit together.”

“We are very confident with the current team. This was not the case at the start. The prior team was not strategic. They were doing a lot but they seemed to be haphazard. We felt that the earlier team was too busy filling things out. The early seminars we offered were not as well promoted as we would have liked. That has changed now and the current team has built trust. The new director has introduced us to the rest of the team and we have growing confidence. They did hit a few bumps in deciding what should be in the curriculum, but [the project director] bridged things with the local team. This made the relationship stronger and helped build trust. [The director] continues to help in that effort.”

- Again, it is important to note that industry partners feel that communication was a problem in the past, but due to some staff changes and better coordination, the current situation is a significant improvement.

Conclusions:

- The project has assembled a good mix of STEM universities covering the major university systems in Vietnam, and has included a private university in the mix. In terms of industry partners, the implementing partner has assembled a strong group that appear to be very committed to their involvement in the project. Motivations for this involvement vary by partner, with those who have an operational presence in Vietnam appear very committed to improving the workforce readiness of STEM students.
- The project lacks a distinctive, consistently understood vision that engages and links all stakeholders. The tendency to refer to BUILD-IT as the next phase of HEEAP diminishes its focus on STEM and runs the risk of limiting focus to the needs of some university partners. Universities and industry partners seek to engage directly with each other through the project and look to BUILD-IT to facilitate such direct engagement.
- Communication on behalf of the implementing partner has steadily improved after some earlier challenges. A focus on proactive and coordinated communication by the implementing partner is critical to project success, particularly in the multi-partner approach. Geographical separation of the strategic and operational responsibilities within the implementing partner structure presents challenges to responsiveness and high-level engagement with partners.

- Both universities and industry partners seek opportunities for direct university-industry engagement and look to the project to facilitate those opportunities on multiple levels.

Question 2b: Benefit to Academic Disciplines

Question 2b: Which academic disciplines within STEM stand to benefit the most? Why (if at all) do some disciplines benefit more than others? Are there ways to focus activities in order to reduce the number of academic disciplines included and to tighten participation?

Finding 19: The project focus is broad and there is no clear articulation of specific programs from a capacity-building perspective. The Project Spine offerings appear to focus more on technology and engineering subjects. There does not appear to be consensus on reducing academic disciplines in the current program structure.

Evidence:

- Analysis of partner university MOUs indicates that over 80% of the programs identified for accreditation are in the engineering and/or technology areas. The two science universities participating identify pure science and math programs, as does Danang University, which participates through affiliation with the Danang University of Technology and Education.
- The number of programs included in the university MOUs varies significantly, with some universities listing two programs and others listing many more, up to 14. The institutions listing science programs for accreditation list two to four programs for accreditation.
- It is important to note, however, that the programs cited by each university in the MOUs are identified as goals for accreditation. They are not explicitly identified as areas for capacity development under BUILD-IT, though they do serve as areas for recruitment targets for women.
- Beyond the general focus on STEM subjects, the project design does not require universities to identify specific programs for development. Interviews with the implementing partner indicated that the project takes the view that resources should be made available as broadly as possible, particularly in order to stimulate faculty motivation for learning.
- Implementing partner representatives interviewed had different views regarding the wisdom of narrowing the focus of academic disciplines. One argument was that narrowing the focus to specific programs could shut out potential faculty champions who might otherwise help build momentum for institutional change within their own departments and across others, pointing to the need to carefully make any reductions on a modular rather than across-the-board basis. Another respondent noted that the disciplines to include in the project were the choice of individual universities rather than the project itself. In hindsight, however, this respondent expressed the belief that it might have made sense to limit the number of programs that would be developed through the project to keep capacity development efforts more focused.
- Within universities there was limited evidence to support narrowing the focus of academic disciplines. University leaders expressed the desire to expand the reach of the project. That said, across interviews with university leaders and senior staff, respondents spoke in terms of desired benefits, and not of the institutional commitments of time and resources necessary to reap the benefits of expanded reach.
- Faculty interviewed generally did not demonstrate a strong opinion one way or another on narrowing or broadening the focus of disciplines. Two comments emerging in faculty interviews are worthwhile to note, however:

- o The first was from a faculty member of one of the science universities who had made a concerted effort to attend most of the Project Spine workshops. He reported that all of the workshops were heavily technology-oriented. Though they were valuable to him as an engineer, he did feel that they would be less valuable to faculty from some other STEM fields, particularly science and math. Similar comments were made by senior administrators of the two science universities. They saw value in the content of Project Spine workshops, but did not feel they were directly related to the sciences.
- o One industry partner observed that the seminar her company offered had less direct applicability to faculty from science disciplines, but she felt they would gain benefit from the multi-disciplinary teams that the seminar established for collaborative learning. Two other industry partners interviewed felt that the software they made available through the program and which they used as the basis for training could be used across all disciplines.

Conclusions:

- At its core, the BUILD-IT project appears to focus naturally on engineering and technology. Though the project is conveyed as a STEM program and as such includes science universities along with their science and math programs, the science and math programs are a minority.
- Neither the implementing partners nor the universities express a need to narrow the focus of the project around certain disciplines. However, this recalls the fundamental question about the approach of BUILD-IT: Can the project achieve results with the broader, open approach around which it is currently designed, or should it pursue a narrower approach that focuses on building capacity at the level of individual universities?
- It is too early in the project to argue definitively that the broader approach will not work, but this approach appears to make assumptions about university engagement, and the evidence thus far indicates these assumptions are not holding up consistently across all partner universities.

Question 2c: Stakeholder Perceptions of Real Benefits

Question 2c: How do different stakeholder groups (private sector partners, faculty and students) perceive real benefits of participating in the program? To what extent do stakeholders perceive that the workforce readiness of students has improved under the project?

Since the perceptions of key stakeholders are primarily about anticipated future benefits, the summaries for the key stakeholder groups—university leaders/administrators, faculty, quality assurance personnel, and industry partners—are not discussed here. Nevertheless, a summary of the research related to this question is provided in **Annex VIII**.

Similarly, in terms of perceptions of workforce readiness of graduates being improved under BUILD-IT, the general consensus from interviews with key stakeholders is that it is still too early in the implementation of the project for results in this area to be definitively identified. Nevertheless, a summary of the research on this question is also provided in Annex VIII.

Question 2d: Range of Universities and Support from the Government of Vietnam

Question 2d: To what degree is the GVN aware of and supporting BUILD-IT activities? Is there a need to reduce or expand the range of universities in the project, based either on ministry priorities or level of expected involvement of individual schools? How do stakeholders perceive

that an expansion or reduction in the range of universities in the project would affect performance overall and at individual institutions?

Finding 20: Representatives of the GVN express awareness and support of BUILD-IT activities conceptually. The project highlights its engagement with multiple parts of the government; however, there is disagreement among stakeholders concerning how MoET can and should be involved.

Evidence:

- All four government representatives interviewed were aware and supportive of the project. They cited the success of HEEAP as the basis for their interest in BUILD-IT. They were also consistent in articulating the importance that Vietnam now places on STEM education and the need to both grow the number of STEM graduates and better prepare those graduates for careers. They noted the challenges higher education institutions have in producing workforce-ready graduates. This was described as a broader societal issue that goes beyond the higher education sector itself.
- The project leadership admits that it is complicated dealing with the GVN, though they indicate both MoET and the Communist Party are reaching out. They are now working with the leadership team from MoET, including with the vice minister's chief of staff, to scale quality assurance and accreditation at a regional level. A project leader reports that the ministry is engaged and wants to understand best practices, particularly for the national assessor institutes. In meetings with project leaders, MoET representatives reference BUILD-IT and key activities. They are figuring out how to integrate this work across the project. The project leader feels that this outreach is mostly positive, as the ministries are asking the project to conduct larger events.
- Following the validation workshop held on June 7, the implementing partner provided additional information about its work with the GVN. Examples from this list are included in Annex IX.
- The list from which the six illustrative examples were drawn includes a total of nine ways ASU collaborates with parts of the GVN, though it was not always clear how this collaboration directly influences achievement of BUILD-IT project results. In particular, available evidence on the new SETI Alliance (announced after data collection for the evaluation ended) suggests that this new initiative potentially has significant areas of overlap with BUILD-IT objectives.
- Two additional pieces of data add some context to this issue. First, analysis of the organizational chart and role descriptions prepared by the project at the request of the evaluation team revealed that currently no senior managerial level project personnel have 100% of their time dedicated to BUILD-IT (the full-time personnel are the business specialist and coordinator.) Thus, for the description of points of collaboration provided, it is not always clear where the dividing line is for collaboration specifically connected to the project's goals and for other interests of ASU. The second piece of data is the previously mentioned response offered by the project leadership when asked about the shift in the Solutions Councils: "I'll start with saying that ASU is a very focused national partner to Vietnam."

ASU has a long and deep history of relationships with institutions in Vietnam, and is a valued partner. The question for BUILD-IT however, is how the GVN should ideally be involved in the project through the multi-partner approach in order to optimize the achievement of project results. Data from other sources suggests some disagreement on this issue:

- Officials from the higher education division of MoET who were interviewed expressed the belief that they should be engaged more strategically in the project than they currently are. They indicated that ASU provides a draft work plan for the project to them semi-annually for comment and input. They are also invited to participate in workshops. However, they feel they should be involved earlier in the planning process so that the project can be better aligned to ministry priorities as they evolve.
- Evidence from three interviews with various implementing partners suggests that engagement with MoET has been difficult, largely because of different interpretations of how MoET should be positioned in the project.
- When asked about engagement with MoET, one of the implementing partner respondents noted that the project submits the work plan to MoET in draft form for input and feedback, stressing that MoET does not have “approval” power over the work plan. The project makes adaptations based on feedback from MoET just as it does with feedback from partner universities. ASU has multiple programs in Vietnam, so the school has relationships with MoET on multiple levels. For BUILD-IT, there is no formal structure that dictates how MoET is to be involved in the project.
- Another implementing partner representative highlighted engagement around quality assurance:

“MoET is due credit because they have made the contribution of establishing expectations regarding accreditation and [quality assurance]. This is shifting the culture of how the universities operate and that helps the project. It’s now up to the universities to build the culture and mechanisms internally to meet that expectation. The shift towards greater university autonomy means that the universities have to take ownership of their policy development, so having MoET not as deeply involved is not an issue.”
- The absence of MoET as a strategic partner in the project is currently most obvious in the policy development workshops. The lead for these workshops noted that as universities try to work through the implications of the new law granting them greater autonomy, there are many unanswered questions that require MoET input. Through his personal contacts, the lead engaged a senior MoET representative to participate in the most recent workshop, and as part of his participation he shared a draft working document on autonomy currently being prepared by MoET. Though this contributed significantly to discussions, it was a short-term fix, and there remains a gap of ongoing high-level MoET engagement at the strategic level of the project, and senior leader engagement from the universities. As previously discussed, the lead for the policy activity feels that without MoET engagement at a strategic level, BUILD-IT’s ability to effect systemic change will be greatly diminished. Industry partners have expressed similar concerns.
- A second senior level representative of MoET’s higher education division did attend the most recent policy workshop, but as a participant rather than facilitator. Her attendance was unofficial and seemed to be a result of efforts by the project to build stronger relationships with the ministry. This suggests that the project may be making gradual progress on engaging MoET in BUILD-IT.

Finding 21: Government and university stakeholders are consistent in their desire for BUILD-IT to expand and not reduce the number of universities in the project, but they recognize that this is unlikely given limited resources. Increasing the number of partners without increased resources could dilute impact. Decreasing the number could also have a negative effect on outcomes.

Evidence:

- All four respondents from the government argued that the number of institutions covered by the project should be expanded rather than reduced, though they recognized that this was unlikely given budgetary constraints.
- Two of four governmental respondents also recognized that the limited resources for the project make the workshop/seminar model the most efficient method of delivery, but they feel that it does limit the project's ability to achieve depth of impact at the institutional level.
- One government respondent had a different interpretation of this situation, saying that even though depth of impact might be reduced by increasing the range of universities, the STEM needs of Vietnam are so great that just expanded awareness of best practices in STEM education across Vietnamese universities would be a benefit.
- The representative of MoIT expressed the strong desire that the number of MoIT educational institutions be expanded to bring balance to the project. Originally, he expected that the balance between MoET and MoIT institutions would be greater, but ultimately only two out of the 11 universities included came from MoIT's jurisdiction. He felt it was unfortunate that vocational institutions were excluded from BUILD-IT in favor of traditional universities, as he felt vocational institutes have an applied, hands-on orientation that could benefit the overall project.
- University stakeholders did not recommend that the number of universities be reduced, possibly out of concern that they would be excluded from the project. They consistently stated that the project should be expanded. In four of the seven university leader and senior administrator interviews, respondents expressed the desire for more of their faculty and staff be allowed to participate in workshops rather than for the number of participating institutions to be increased. ***This suggests that they may view BUILD-IT as an awareness-building opportunity, as articulated by one GVN representative, rather than as a focused capacity-building undertaking.***
- Two implementing partners argued that increasing the number of universities under the current budget structure could affect quality, while a reduction could create negative consequences:
 - Adding universities to the project without increasing resources would have a negative impact on outcomes since the project would stretch engagement too thin to support the capacity development of all partners. Reducing the number of universities involved would not necessarily hurt the remaining universities, though it could have an impact on the project's ability to reach its five-year targets. If the reductions were an across-the-board measure rather than for specific activities, it could also have a negative effect on USAID Vietnam's more global objectives since events such as STEMCON and facilities such as Maker Spaces are critical to U.S. Government aims in country and this type of forum/venue is highly valued by the GVN.
- As mentioned, the number of universities fully engaging in the project is less than the total of 11 university partners. The implementing partner noted that several universities have expressed strong interest in participating, and have inquired about self-funding their participation, though when they realized the full financial commitment needed, they reconsidered. In the Y2 Q2 report, ASU noted four institutions that continue to actively lobby for inclusion in BUILD-IT. Implementing partner respondents also note that they are conducting their own mid-term evaluation of the project and may suggest that several existing university partners who are not participating as actively as expected be transitioned out in favor of other universities that actively seek to participate.

Conclusions:

- The GVN is aware of and supports the BUILD-IT project; it sees the project as a pathway forward to help the country improve the workforce-ready quality of STEM graduates. This is a priority within MoET, and this message has trickled down through the ministry. Both government and university stakeholders want the number of partner universities in the project to be increased, rather than reduced.
- The implementing partner collaborates with different parts of the government, including MoET. Though some of these points of collaboration strengthen BUILD-IT, there remains a need to engage MoET directly in achieving project goals. This is particularly important as universities wrestle with the question of what increased university autonomy means and does not mean.
- The implementing partner has a long history within Vietnam and operates on multiple levels, some outside the direct umbrella of BUILD-IT. Though this can offer advantages to the project, it sometimes can be difficult to determine where BUILD-IT's engagement with the government partner ends and where other ASU engagement begins.
- There appears to be some natural selection taking place in the project, given that some partners have underutilized the resources already available to them. This could be used as an opportunity to reduce the number of partners, though such a move could have a negative impact on the goal of sustainable systemic change to STEM higher education in Vietnam if it's not carefully undertaken in consideration of which activities would be cut.
- The project is monitoring the involvement of university partners and reports that it expects to address the issue of underperforming partners in the near future. It also has a waiting list of alternate partners that could be brought in to keep numbers consistent, though given budget constraints, this course of action would not be recommended.

Question 3a: Partner Institution Performance

Question 3a: Why, if at all, do specific partner institutions struggle or excel in performing under the project?

Finding 22: Leadership and internal politics within institutions seem to be the primary reasons why a partner university succeeds or struggles. Progress also depends on relationship building between the implementing partner and the university.

Evidence:

One hundred percent of the implementing partner interviews confirmed that **some universities excel while others appear to struggle**.

- **Leadership** seems to be core factors in whether a university excels or struggles:
 - Interviews with the various members of the BUILD-IT team indicated that leadership sets the tone for the university. If leaders do not have strong knowledge of the program, progress will be affected. Some rectors have not done what they need to do for the project to work at their universities. In the design phase, the project team did not expect rectors to be in each meeting, but the project needs to get more engagement at this level.
- **Internal politics and communication** also have an impact:
 - The primary contact point in many universities is the international cooperation department. The role of the point of contact is very important. When receiving information (about activities) from the BUILD-IT team, some just pass the messages on without trying to engage potential participants or raise awareness. A number of universities lack a clear and

consistent understanding of BUILD-IT, sufficient English speakers to engage, and what it is intended to do.

- Implementing partners indicated that sometimes the challenge is the university's internal politics. Some of the partner universities have had leadership shifts, and some have policy problems with the central government that have stalled those institutions.
- **Prior relationships** with the implementing partner also help:
 - Overall, the implementing partner reported that the project seems to flow better at institutions where it has an established relationship. Institutions with a prior relationship seem to have more commitment. An implementing partner respondent said that there is more “trust” in relationships that come from the prior program.
 - As previously noted, with some exceptions, former HEEAP universities tend to be more engaged than non-HEEAP universities.

Conclusions:

- Universities participating in the project are distinctive institutions with distinctive needs. Though some partner universities have taken ownership of their development through BUILD-IT and are moving forward well, other universities have not.
- Leadership and internal dynamics appear to be at the core of the challenges that less engaged universities face. Though rectors do not need to be engaged regularly in the project, their support is critical for sustainable capacity to be built at their institutions.
- Relationships are critical to help institutions excel, and building such relationships is a slow process.

Question 3b: Challenges

Question 3b: What challenges or difficulties do partners or beneficiaries experience in the implementation of the project? How can these challenges be reduced or corrected?

Finding 23: Stakeholders sometimes face internal challenges to engaging in the opportunities for learning through the project, and the project works with them to meet these challenges. However, a deeper, more collaborative approach to university-partner engagement could help strengthen these efforts, particularly with universities that struggle in BUILD-IT.

Interviews across different stakeholder groups highlighted challenges or difficulties faced by partners or beneficiaries.

- **Limitations on Time:** Time appears to be a factor that limits participation in activities. Implementing partners report learning that universities have many “pulls” on their time, so it is difficult to engage them, particularly leaders. Four of seven interviews with senior leaders/administrators noted that the time commitment needed for workshops sometimes makes it difficult to attend, particularly for senior staff. Travel time to workshop venues also must be factored into the time taken away from the university. Fifty percent of the faculty interviews also noted time as a concern, particularly in terms of limitations that their teaching schedules present in participating in workshops/seminars.
- **Challenges in Applying Learning:** Faculty who attended Project Spine workshops felt they were very informative. In four of the five interviews conducted with faculty, participants noted challenges in applying what they learned. Though the project's recently launched HELIX portal

and affiliated community of practice are meant to provide such a platform for knowledge sharing, four of the five faculty interviewed did not yet have knowledge of the platform, possibly because they're in English.

- **Challenges to Focused Capacity Building:** A theme that emerged across seven different stakeholder interviews, though not deeply within any one stakeholder group, was the issue of focused capacity building. Specifically, this refers to the ability of the project to have an impact on the capacity of institutions, given that it reaches across so many areas.

“There are so many different pieces to the project. The institutions are just not that robust, so it is difficult to get them to focus on everything and to engage.”

- **Challenges to Planning:** Evidence suggests the project sometimes places emphasis on coordination of activities and not enough on understanding universities' distinctive needs.

“Everything is already planned in advance and restricted in budget. We would like to be involved a bit earlier in the planning process.”

Conclusions:

- Though the workshop model of delivery is the most efficient approach to implement the project across the 11 participating universities, in some areas it appears to present challenges to different stakeholder groups.
- There are many parts to BUILD-IT, and some institutions struggle with meeting their obligations to the project, as well as **translating what they learn in workshops into organizational learning and change**. Some of these challenges are being addressed iteratively as implementation proceeds, but there is still some concern about the capacity of individual universities to absorb and channel the diverse resources of the project in order to grow. This depends largely on the ownership a university's leadership takes for organizational change and development. However, there also appears to be a need for the project to stimulate these processes through increased collaboration around planning at the level of individual universities.

Question 3c: Applying Success Factors across the Project

Question 3c: How can distinctive factors contributing to success in certain partner institutions be applied more broadly across the entire project?

Finding 24: The project has introduced some effective mechanisms to boost knowledge sharing and cross-fertilization of success factors. Deeper relationship building across all levels of the project is also crucial to achieving success.

Project Mechanisms That Exist for Knowledge Sharing: The project includes a number of mechanisms that allow for successes in certain institutions to have broader application. These include:

- **Workshop Discussions:** Workshops are designed to provide participants with training from experts, and to allow participants to share their knowledge, questions and experience with each other. The implementing partner reports that this is one of the rationales for combining former HEEAP and non-HEEAP universities.
- **Coaching Circles:** Between workshops on policy, leadership and quality assurance, partner universities have had the option of engaging in coaching circles with their peer institutions. The purpose of these circles is to enable universities to support each other as they implement the skills they learn in the workshops.

- **Biweekly Project Communications:** The implementing partner indicated it is introducing a biweekly communication with industry partners. This instrument can be used as a means to highlight successes of individual partner universities so that others can learn from them.
- **HELIX Platform:** This platform is meant to enhance cross-institutional knowledge fertilization through information access and a community of practice that allows direct knowledge sharing. The platform has been launched, but currently awareness of it, and its perceived value, are low at universities.
- **Solutions Councils:** The Solutions Councils are also designed to be a vehicle for knowledge sharing across the university partners. As previously discussed, however, the degree to which they do or should operate in this manner is an open question. A local industry partner that participates in the councils noted that university partners are sometimes reticent about discussing their problems in a group setting.

Building Stronger Relationships: Across all parts of the project, relationships are the key to strengthening and sustaining results.

- The implementing partner has reported that the project seems to flow better at institutions where it has an established relationship. Institutions with a prior relationship seem to have more commitment.
- Industry partners stress that the project should work to build stronger relations:
“If the project relies on just one or two points of contact, at the end of the day, they may not give the project implementation the focus it needs. This is not something that can be done top-down or at a distance. It needs to be done dynamically through strong relationships at all levels and in close proximity, so that regular collaborative engagement takes place.”
“For things to be sustainable, we would like ASU to speak to us about the different components of the project, so they can explore mutually how to integrate our products more broadly... Our wish is that ASU continues on its current path in building the relationship on a more strategic level with us, and for providing a much more engaged bridge between us and the universities, rather than just trying to get us to do trainings, and just trying to get universities to attend.”
- Finally, the donor feels that increased relationship building is essential to BUILD-IT:
“Relationships are needed in order to get the partner universities to engage in the project even if it means flying to another city. The staff should really be cultivating these relationships with different partners, but they are not doing that. It seems that meetings with the universities tend to take place when the U.S. staff are in town, yet they’ve hired a capable Vietnamese team that isn’t yet mobile even though their communication is likely to be smoother given the language and cultural gap.”

Conclusions:

- There are some established knowledge-sharing mechanisms embedded in the project that are proving effective as implementation unfolds. University partners are learning to address issues collaboratively and to learn from each other.
- Knowledge sharing mechanisms such as the HELIX portal are in the early stages of implementation and will hopefully gain traction, though their purpose is not yet understood and appreciated by university partners. Other mechanisms also offer the opportunity to serve as unifying vehicles for sharing distinctive features of success, though their usefulness and management must be agreed across stakeholders.

- Relationship building between the project and all stakeholders across the multi-partner model needs to be strengthened and developed much more than is currently the case.

PRINCIPAL CONCLUSIONS

This report has presented a mid-term evaluation of the USAID-sponsored BUILD-IT project in Vietnam. The evaluation also sought to understand distinctive aspects of the project's design as it has been implemented in the changing Vietnam higher education operating environment. Three multi-part questions focused on: 1) evaluating how the underlying logic of the project is playing out in implementation and practice; 2) the willingness and contributions key partners bring to achieving goals through a dynamic multi-partner approach; and 3) insights about how structures, activities and ongoing assessment efforts may be adapted and/or improved.

Before recommendations are presented, it is important to capture the principal conclusions of the evaluation so that recommendations can be contextualized. These are:

- 1) **Early Days but Proceeding as Designed:** The project is in the somewhat early stages of developing capacity at partner universities but is increasingly offering a diverse array of quality activities intended to strengthen university capabilities in policy development, applied project-based learning, quality assurance systems, industry engagement and gender issues. Ultimately, the impact of these and future activities will depend on partner universities' willingness to take advantage of the opportunities for growth BUILD-IT provides to them.
- 2) **University Engagement Varies:** Actual levels of engagement in project activities vary by institution. Some institutions are very engaged in the activities thus far and seek to make the most of them. Others appear less engaged, as evidenced by their low attendance at training events. Unless this situation changes, there could be a negative impact on project results.
- 3) **Rector Engagement:** The policy development seminars have not attracted their original target audience. Rectors have not participated, though some universities have sent vice-rectors to training. There is disagreement among the implementing partners on how critical direct engagement by university rectors is in this component of the project. However, evidence indicates that the project is most dynamic at universities where leadership engagement and support are high.
- 4) **Workshop Model Influences Level of Engagement:** Various reasons are offered for uneven participation in workshops, including cost and distance required to participate, as well as internal constraints on targeted stakeholders' available time. Leadership commitment appears to be a strong determinant of the overall engagement of partner universities. Where leadership awareness and support for BUILD-IT are strong, so too is the university's overall engagement with the project, say implementing partners.
- 5) **Prior Relationships:** Though prior relationships are not the determining indicator for university-level engagement in the project, universities with a prior relationship history with the implementing partner tend to be more engaged. These relationships are based on past USAID projects, including HEEAP. There are exceptions to this, and the implementing partner reports a more geographical distinction, saying that universities in the north of Vietnam tend to be less engaged.
- 6) **BUILD-IT Vision:** The project lacks a clear and consistently understood vision that focuses engagement and collaboration among all ecosystem stakeholders to achieve results. The implementing partner maintains that the vision for BUILD-IT is clear and understood, but evidence

suggests otherwise. Former HEEAP universities and even representatives of the implementing partner consistently referred to BUILD-IT as the next phase of HEEAP. This is complicated by an inconsistent focus on workforce readiness as well as the lack of a definition of workforce readiness that makes sense to all stakeholders, including students. If the ultimate result is improved workforce readiness of STEM graduates, then this must be *explicit* in the vision, as well in as how the three project objectives interplay to support this result.

- 7) **STEM Focus:** Science- and mathematics-focused universities form a minority of university partners on the project. Though certain activities are not defined by discipline, the feedback given by science universities is that the curricular activities are more suited to the engineering and technology fields. This relates to the project's vision. The critical issue to be addressed is to what extent BUILD-IT is truly a STEM project at its core versus an engineering and technology project that has expanded its reach to include science universities for specific events and facilities.
- 8) **Multi-Partner Collaboration:** The implementing partner has assembled a strong group of committed university partners for the project, and the project is leveraging their participation. Not all mechanisms for partner collaboration have been launched. Both universities and industry partners have expressed the desire for direct engagement with one another, and the industry partners want to ensure that their involvement remains strategically focused on achieving project goals. Proactive communication by the project is valued and expected by partners, including quick response times, collaborative engagement around university needs, and clarification on the optimal degree of GVN involvement to achieve sustainable results.
- 9) **Solutions Councils:** One of the key features in the design of BUILD-IT are Solutions Councils comprised of university leaders, industry partners and government stakeholders. These have been launched, but without the original strategic thrust with which they were envisioned. The implementing partners argue that challenges posed by university rectors and the location of many industry partners necessitated a change in focus. Some industry partners have questioned whether the current approach will diminish the impact of the councils on project results.
- 10) **GVN Involvement:** The implementing partner engages with the GVN on multiple levels, with some direct implications for the project. There is also indirect engagement that seems to stem more from the implementing partner's strong history of activity in Vietnam. Several stakeholders noted that MoET direct engagement with BUILD-IT is not strong. The reasons for this are complicated. Without deeper direct engagement of MoET in the project, particularly during the current stage of formulating norms relating to university autonomy, the sustainability of results may be affected.
- 11) **Sustainability of Results:** It is too early in the implementation of BUILD-IT to make a definitive assessment of results sustainability. Nevertheless, initial evidence on activity attendance suggests a potential inhibitor to sustainability is the uneven engagement of some universities in the activities offered by the project. Those stakeholders who have engaged in activities do perceive benefits. Also, certain key features of the project, notably the Maker Spaces, are constrained by possible challenges including their physical location, limited number and the need to serve multiple institutions.
- 12) **Results Framework:** There are some inconsistencies between the project description in the Cooperative Agreement and the results framework in place for the project. These have mainly to do with the placement of workforce readiness and the degree to which the three project objectives interact and are explicitly integrated.
- 13) **Top-Down vs. Bottom-Up Capacity Building:** The project employs what is effectively a top-down, coordinated workshop model where training opportunities are offered to all universities, with some individualized support offered on an institution-by-institution basis through coaching

circles and direct advisement. Some challenges in securing stakeholder engagement, including rector engagement at some institutions, raise the question of whether a certain degree of bottom-up support should be offered to universities to jump-start their capacity development.

- 14) **Mix of Universities and Disciplines:** There is limited evidence from stakeholders to support a reduction in the number of universities involved in the project. Stakeholders expressed the wish to increase the number of universities, though they recognize that there is not funding to achieve this. There appears to be natural selection occurring because of weak participation by some universities, but there is concern that reducing the number of universities could have impact on the ability of the project to achieve systemic change. The implementing partner has a waiting list of interested institutions. Also, the university MOUs do not directly define disciplines for development through the project. There is a possible argument to be made that focusing training and resources on a targeted group of disciplines at each university could strengthen results attainment and sustainability.
- 15) **Monitoring, Evaluation and Learning:** The project reports results on an aggregate basis. This does not capture the challenges faced at the level of individual institutions. Since the project collects data on a disaggregate basis for internal management purposes, reporting disaggregated data to USAID is feasible, and can help strengthen the donor's understanding of the strengths and challenges in project implementation. The project also lacks a CLA approach that could help strengthen results achievement; this would involve all stakeholders in the BUILD-IT innovation ecosystem taking a collaborative approach to continuous learning that challenges assumptions and seeks ways to adapt to changing circumstances as they emerge.

RECOMMENDATIONS

Question 3: How can project performance be strengthened? (Priority focus: streamlining partners, activities and M&E)

To achieve sustainable results, the project must consider the distinctive challenges and strengths of each of the partner universities. Former HEEAP universities have already achieved a baseline of institutional capacity upon which they can build. This may not always be the case for the other universities. If the project wishes to build sustainability across all partners, it must recognize that universities may require a certain degree of individualized support. Ultimately it is up to the universities and their leaders to take ownership of their own capacity development, and a more collaborative approach to planning could help. Additionally, particularly in the earlier phases of the project, some universities may require proactive support in embedding BUILD-IT into the strategic visions for their individual institutions.

Before this can be done effectively, however, the project itself needs focus. Below are some recommendations to help achieve this, followed by ways the project can work directly with universities:

1. Ensure that the implementing partner articulates a clear vision for BUILD-IT that meets USAID expectations for the project. The project suffers from an inconsistently understood vision of what it is trying to achieve and how BUILD-IT differs from prior USAID projects the implementing partner has managed. Unless a clear and consistent vision for BUILD-IT is agreed and communicated regularly across stakeholder groups to focus the project, the impact of capacity development efforts will be under optimized. A clear vision for any capacity-building initiative should provide stakeholders with a mental map of three domains:

- 1) The world they currently live in;

- 2) The world they ought to live in; and
- 3) The knowledge they should seek and create in order to reach the world they ought to live in.

A vision helps stakeholders map the pathway for how they can move from the present to the future. To be effective, it must be clear, compelling and intended to build excitement for that future. Efforts to strengthen BUILD-IT's results framework (recommendations to follow) should emerge from a clear and shared understanding of the future that the project is meant to create, and what different stakeholders need to do to reach that future.

The development of this vision should be a collaborative process:

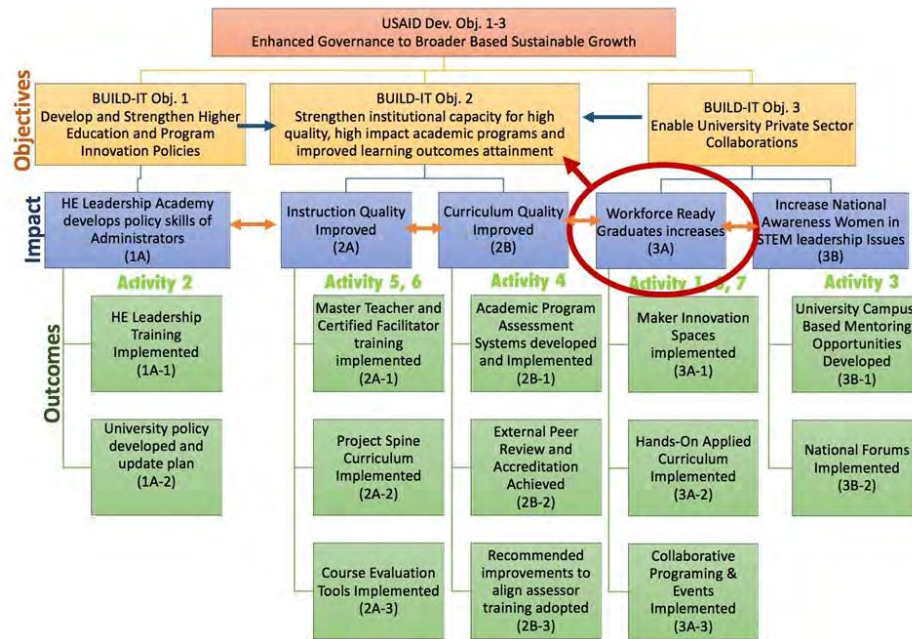
- The vision should be presented to partners—government, academic, industry, implementing and USAID—not as a fait accompli, but as a catalyst for engagement and dialogue. Partners should be encouraged to raise questions, to challenge assumptions and to add to the process.
- The Solutions Councils offer a possible forum to update the vision. However, consideration should be given to determining the best mechanisms for partners (particularly universities) to feel comfortable expressing their views, since evidence suggests that university stakeholders are sometimes reticent about expressing their views in a group setting.
- The project should consider using an outside facilitator who can help guide this process. To ensure the perspective and needs of individual universities are accounted for, the facilitated process should include both one-on-one discussion with universities, as well as group-level discussion.

The vision should become a visible and constant part of BUILD-IT's enterprise:

- The vision should be used to strengthen awareness and support for the project at the university level. It provides the basis for project staff to engage faculty, partner university staff and students around the aligned pathways BUILD-IT opportunities create for them.
- University leaders have a critical role to play in living the vision; it is the stories or narratives they use to demonstrate the vision in action that move organizational change initiatives forward.
- As the project continues its efforts to draw rectors more dynamically into the project, it can work with university leadership teams to collaboratively embed the BUILD-IT vision in their discrete institutional visions, while coaching them on how to build internal momentum for organizational change.

2. Refocus the results framework. The framework should flow from a shared vision for the project with its components explicitly integrated to sharpen focus on higher-level results. The arrows in Figure 2 below highlight some possible ways to refocus the framework. They focus attention on placement of workforce readiness, the relationship of objectives to the theory of change, and lateral integration of outcomes and impact.

FIGURE 2: BUILD-IT RESULTS MATRIX



- Placement and definition of workforce readiness:** Project documents speak of improved workforce readiness of STEM graduates as the higher-level result of the program, making it the cumulative result of the three BUILD-IT objectives. In the current results framework for the project, however, it is placed below Objective 3. In the framework, it should be placed above the three objectives, and immediately below “Enhanced Governance to Broader Based Sustainable Growth” (USAID Dev. Obj. 1-3). Alternatively, given the direct connection between workforce readiness and efforts to strengthen institutional capacity for academic programs and learning outcomes, there is an argument to be made for integrating workforce readiness directly into Objective 2: *“Improved workforce readiness of STEM graduates through strengthened institutional capacity for high-quality, high-impact academic programs and improved learning outcomes attainment.”*

This shift assumes that the working definition of workforce readiness clearly links to the academic preparation of students, rather than focusing exclusively on internships, as governmental partners and some university partners have done. The project must work in collaboration with key partners (USAID, GVN, universities and industry leaders) to ensure that the definition of workforce readiness for the project is consistently understood and agreed across stakeholders so that capacity building efforts are consistently focused.. The project should also consider the impact that the definition of workforce readiness has for students in the project ecosystem to ensure that they understand the value added of BUILD-IT to their career training and development.

- Reconsideration of theory of change:** If the ultimate goal of the project is improved workforce readiness of STEM graduates through improved academic programs and learning outcomes, the project should consider a redeveloped theory of change that accounts for the dependency of Objective 2 (Enhanced Academic Programs and Learning Outcomes) on Objective 1 (Policy Development) and Objective 3 (Private Sector Collaborations). The current approach of having Policy Development and Private Sector Collaborations as discrete objectives on equal par with Academic Programs and Learning Outcomes potentially dilutes the focus on Objective 2. Though this might not be the case in practice, the distinction to be made is one of

achieving systemic change by strengthening the focus on clear project results, specifically academic programming and learning outcomes to improve workforce readiness.

- **Policy development efforts** (Objective 1) are grounded in the five “wicked policy challenges” facing universities, and within the policy seminars, institutions have flexibility to determine their own priorities for policy development. From the perspective of developing policy capacity at the universities, that makes sense. However, it is not a given that the policies developed will directly focus on strengthening institutional capacity for academic programming and learning outcomes to improve workforce readiness. To emphasize optimization of academic and learning outcomes over the life of the project, making Objective 1 a sub-objective of Objective 2 could sharpen focus. Over the longer term and using non-project resources, universities can channel their newfound policy capacity to other areas of institutional priority.
- **Private sector collaborations** (Objective 3) could also be a sub-objective of Objective 2. Again, this is a question of focusing limited resources in the best way possible to optimize the ultimate project result. The Maker Spaces, applied curriculum and collaborative programming activities already have this focus; therefore, it makes sense for them ultimately to channel into academic programming rather than exist under collaboration for collaboration’s sake. There is also an argument to be made for Women in STEM efforts to channel into academic programming and learning, ensuring that workforce readiness remains the ultimate focus.
- **Lateral integration of outcomes and impact:** The current depiction of the results framework emphasizes hierarchies of results, while not considering the deeper interconnectedness of outcomes. Achievement of outcomes in the Maker Spaces and hands-on curriculum are ultimately interconnected with facilitator training and the Project Spine. They also have a symbiosis with academic program assessment systems and accreditation efforts. This lateral interconnectedness could be made more explicit in the framework. Doing this would bring a greater degree of focus to capacity development efforts, particularly when decisions must be made on the best way to channel the limited resources of the project.
- **Integration of Maker Spaces:** Since the Maker Spaces are featured as a key part of the results framework, the implementing partner should ensure that comprehensive and realistic implementation plans for the Maker Spaces are developed and communicated with stakeholders as soon as possible. These plans should demonstrate specifically how the Spaces are to be incorporated into the curriculum of each partner university in order to achieve project results, and how the challenges presented by the limited access to spaces will be handled.

3. Consider the possibility of focusing the project through a reduction in the number of partner universities. There are clearly universities that struggle in the project, yet it is not fully clear to what extent those struggles emerge solely from within the universities themselves or from the challenges universities face in trying to engage with a project that has so many moving parts. Before BUILD-IT decides to reduce the number of university partners, it should first focus the project as suggested above. Concurrently, the implementing partner should determine how it can streamline project implementation and offer on-site support consistently in a way that offers cost efficiencies while better meeting the distinctive needs of universities. Such efforts should establish focus and explicit expectations for university performance that can lead to sustainable results.

Should budgetary constraints dictate that the project be scaled back in terms of the number of university participants, such decisions should be reached collaboratively between the implementing partner and USAID to ensure that they are based on the deep understanding of Vietnamese institutions

that each party has (and that each contributes to USAID's advocacy work in the country). The impact of such decisions on industry partner support of the project should also be considered.

It is beyond the scope of the evaluation to make adequately informed decisions on specific institutions to eliminate as part of any budget reduction exercise. However, the following guidelines can be offered for the implementing partner and donor to consider:

- **Focus on eliminating the universities that are not engaging in the project at the level expected to achieve results.** Of the 11 partner universities, evidence suggested that between seven and nine universities work to leverage the resources of BUILD-IT to achieve lasting institutional change (though there is also some variance in the degree those within this group engage project resources). In some instances there have been mitigating circumstances that have influenced an institution's ability to engage (such as leadership changes), and these should be considered in any decision. However, results can only be optimized in institutions where stakeholders take ownership of the change process, so if universities are not engaging at a level needed to achieve results, they should be disengaged.
- **Focus on maintaining balance across the main university systems in the country.** The implementing partner reports that it selected university partners based on the major regional university systems of the country – North, South Central, and the Mekong Delta. It also engaged a private university. Since BUILD-IT is intended to achieve change across the Vietnam higher education system, any reduction in the number of participating universities should be done in a manner so that the coverage across the various regional systems remains intact.
- **Focus on ensuring the project continues to engage a variety of STEM universities.** Background documents indicated that BUILD-IT was a concerted departure from HEEAP inasmuch as it expanded focus beyond engineering and technology institutions to embrace science and math. If USAID wishes to retain the extended science and/or math focus, then effort should be made to ensure that at least some of the science universities continue to be involved in the project.
- **Consider innovative strategies of extending learning beyond a reduced number of target universities.** As part of a plan to reduce the number of universities participating in the project, BUILD-IT may wish to consider ways to more formally shift some responsibility for cross-institutional learning to the universities themselves. Some of the former HEEAP universities are already offering guidance to other universities through the coaching circles. Particularly if BUILD-IT seeks to continue to build off of the success of HEEAP universities in the project, it may wish to consider redesigning the project so that experienced HEEAP universities couple with non-HEEAP universities (perhaps in the same regional system) in order to share learning, expertise and resources across institutional boundaries.

4. Balance top-down and bottom-up capacity building. BUILD-IT provides opportunities for partner universities to develop their capacity around critical areas. However, it falls to the institutions—particularly the leaders of those institutions—to take ownership and create the environment for change. This appears to be happening at some institutions but not others. Though the project is not designed to directly intervene in the operations of the university partners, a limited degree of institutionally-focused, bottom-up support may help stimulate capacity development at the university level. The purpose of such support should be to help universities recognize their internal obstacles to change, and to help them develop strategies to overcome such obstacles. If universities are not willing to engage around such strategic issues in a meaningful way, their ongoing participation in BUILD-IT should be reassessed.

USAID should ask the implementing partner to present evidence that demonstrates how the current workshop model is or is not building institutional capacity at the level of each university. The implementing partner should also put forth specific plans for how it can address some of the development challenges of lower-performing universities, or leverage the strengths of higher-performing universities to reinforce efforts at those universities that appear to struggle. Based upon this, the project may wish to consider ways of working directly with university leadership teams through a more consultative approach that helps create an architecture for organizational change. Though ultimately it falls to the leadership of the partner universities to take ownership of their own capacity development, focused support on the institutional level at critical points in the project's lifetime could help jump-start and reinforce bottom-up achievement of results. In return for such support, leaders would need to commit to real and specific institutional goals.

5. Consider focusing BUILD-IT on a specific number of academic programs at each institution.

The evaluation was not designed to assess which specific academic disciplines should be the focus of BUILD-IT. Such a decision should emerge from collaborative discussion among the implementing partners, universities, industry partners and government representatives. The Solutions Councils offer the ideal forum in which to consider such issues.

There are valid arguments for and against the current broad approach of allowing universities to decide the target academic programs to focus on at each institution. The project does not wish to shut out potential champions among the faculty who might fall outside of the selection of departments contained in a more focused approach, as the project design intends to create waves of faculty training through the Master Facilitator activity. However, in thinking of systemic capacity building as both a top-down and bottom-up exercise, at the level of individual universities, there is a case to be made for focusing some of the project's already limited learning-based resources to achieve higher impact across a more clearly defined, possibly narrower range of disciplines. Such an approach would also create a stronger environment for accountability in achieving project results.

Narrowing the focus of academic disciplines would help the project channel its limited resources in a manner which concentrates capacity development efforts in a more strategic manner. Additionally, it would place greater responsibility on the partner universities to take ownership for broader institutional capacity development, as it transforms certain disciplines into internal "positive deviants for change" that can then be used as catalysts for change across a greater range of academic disciplines. All organizations—universities included—must make strategic choices based on limited resources. Working with universities to prioritize a tighter range of programs for development and working with them to develop a longer-term plan to expand knowledge and organizational learning systematically across other programs could be one "bottom-up" way the project helps universities build sustainable capacity to operate autonomously.

6. Revise university MOUs around outcomes critical to project success. Currently the only outcome-oriented obligations in the university MOUs are accreditation targets and Women in STEM enrollment expectations. Policy and curricular/instructional expectations are articulated in terms of staff training outputs. To focus universities on their obligations in achieving project results, BUILD-IT may wish to consider revising the MOUs to give universities more explicit responsibility for outcomes at the institutional level. Such outcomes could be specific targets for policy adoption, implementation of new curricular models, and creation of incentives to encourage faculty to adopt new instructional methods. Identification of critical workshops as well as project expectations on the level of university stakeholder expectations should be made specific. These expectations can be agreed with each university semi-annually as the schedule of workshops is set. These expectations on attendance can be attached to the MOU as an addendum.

7. Make explicit the conceptual framework for BUILD-IT to strengthen focus on the multi-partner approach. Assessment of the validity of the results framework required the evaluation team to consider the framework both as a hierarchy of actions and as an integrated system designed to optimize program results. The evaluation team not only assessed implementation of the individual project components, but also perceived dynamics of the project as a holistic unit. This was important to understand how the multi-partner approach strengthens project results. The project documents underscore this approach by emphasizing the creation of a dynamic innovation ecosystem of students, faculty, industry and government.

To build a dynamic innovation ecosystem, stakeholders should recognize that BUILD-IT operates in more than one system at any time. At a macro level, the project engages academic, industry and government partners collectively. At a micro level, each university is a sub-system of stakeholders, each with its own distinctive strengths and challenges. This micro-level distinction is important given evidence that suggests academic and industry partners seek opportunities for direct collaborative engagement. Annex XI provides a visual representation and additional details about this innovation ecosystem applies to BUILD-IT.

The following is an initial snapshot of work the project can do to strengthen the BUILD-IT system at the university level. To do this, the project must develop strong, collaborative relationships at multiple levels in the partner universities.

- Top (rectors/vice rectors/deans): Work to embed an explicit BUILD-IT vision strategically within each partner's institutional vision of how the project will help the university achieve its goals. Coach leaders on how to communicate that vision in their critical role as change agent.
- Middle (faculty/staff): Work to build understanding and appreciation of how BUILD-IT activities help faculty/staff achieve university vision through emphasis on improving curricular and instructional approaches.
- Bottom (students): Work to build awareness of how BUILD-IT significantly strengthens student workforce readiness and why that should matter to them.
- Validators (GVN, industry partners, USAID): Work to convey the value added from continuous collaboration and engagement to improve workforce readiness and sustainable growth in Vietnamese STEM industries.

Making the focus on ecosystem development explicit through the use of a conceptual framework can help make BUILD-IT's engagement with government, industry and academic partners more collaborative, purposeful and adaptive. This can help strengthen the impact of the multi-partner approach. **Optimization of a dynamic innovation ecosystem** depends on robust relationship building as an essential knowledge sharing vehicle. \ Relationships with universities and all partners should be multi-level and dynamic, allowing direct engagement between the project and key stakeholder groups. Such multi-level engagement should be an explicit part of the project.

8. Consider how to optimize GVN and industry partners' involvement in the Solutions Councils.

Though the participation of industry partners is leveraged well through Project Spine seminars, and is expected to continue to be strengthened through collaboration in the Maker Spaces, there is some confusion on how the Solutions Councils should be approached. There are some valid reasons why they have thus far not been activated in the manner in which they were originally conceived; however, some question whether the way they have been activated adequately meets the needs of the project as well the expectations of various stakeholders. Based upon this, there is a good opportunity to engage council members collaboratively to determine an approach that optimizes achievement of project results. The approach used in each of the four councils will vary likely based upon project needs and the interest of

partners to contribute. To keep engagement robust over the life of the BUILD-IT, it is important for the project to solicit partners' views of how participation mechanisms contribute to the success of the project, and how participation might be considered differently as the project evolves.

As noted previously, the change in the approach to the Solutions Councils appears to have taken away a critical **and direct** mechanism intended to align university-level change management efforts with the insights and contributions that industry partners are meant to provide. University leaders appear to resist sharing their challenges with partners in the group setting of the councils, and the councils do not appear to be structured in a way that leverages industry expertise on the needs of the universities as they adapt their curricula to improve the workforce readiness of graduates. This shift appears to have weakened a key mechanism of strategic integration in the project.

Evidence also indicates a need for engagement among stakeholders regarding how and when representatives of the GVN should be involved in the project, specifically MoET's involvement as a strategic partner for the project, and not a strategic partner to ASU. Though the implementing partner indicates they interact with the Ministry on a higher level, it is not clear how this interaction directly optimizes project outcomes. Based upon evidence from various stakeholders, there is a perceived need that deeper, more direct engagement among MoET, university partners and other partners is necessary for results achieved through BUILD-IT to be sustainable after the life of the project. Again, this is a discussion that should take place collaboratively among key stakeholders including the implementing partners, universities, industry partners and USAID.

9. Continue to strengthen and empower BUILD-IT's local Vietnam team. The construction and maintenance of a dynamic innovation ecosystem requires consistent engagement, nurturing and regular nudging. As noted in the project documents, trust-based relationships are at the heart of such a system. Based on stakeholder feedback there is the opportunity and, at some levels, a need to empower the local BUILD-IT team to a greater extent than it currently is. Progress has been made since Y1, but there still appears to be more work to do. The project's strategic direction is U.S.-based, while the operational support is Vietnam-based. Though this works on some levels, evidence suggests that it presents challenges on others, specifically in response time, language/cultural barriers that limit proximal engagement, and university engagement. Continuous efforts to build the capacity and scope of the local team, and empower it to build deeper multi-level relationships, can strengthen the achievement of project results.

Some of the recommendations noted above require a more systemic approach to relationship building where the implementing partner directly and regularly engages with multiple levels of stakeholders within universities in order to build capacity from the bottom up. It also necessitates building robust relationships with industry partners so that emerging needs or opportunities at individual universities can be considered and possibly matched to interests and expertise of industry partners. Such bridging assumes that a local team is empowered to make connections and build trust to extend information pipelines deep into the overlapping local systems where BUILD-IT operates.

The project should have a senior director with 100% of her/his time dedicated to BUILD-IT. The implementing partner has many activities in Vietnam, and operates on many levels. A dedicated senior director for the project will help ensure that BUILD-IT has a fully dedicated advocate with direct and full responsibility for achieving project results. In turn, a fully dedicated director should also ensure that the project is embedded and represented distinctively within the implementing partner's overall portfolio. This individual should have strategic responsibility for working closely with university and other partners on understanding evolving needs and challenges as the project builds systemic capacity in STEM workforce readiness. At the same time, they should also have operational oversight in identifying and marshaling resources for the project as it evolves, both from ASU and elsewhere. This **one** individual

should be based in Vietnam in order to ensure that relationships with local partners are as collaborative, adaptive and outcome-oriented as possible, thereby strengthening and optimizing the multi-partnership model to achieve sustainable results.

To optimize performance in the remaining life of the project, the following adjustments can be made to M&E:

10. *Move from aggregated to disaggregated M&E reporting.* To achieve results on the macro level of STEM higher education in Vietnam, it is important to understand how results are being achieved at the micro level of individual partner universities. Expanding reporting to include institutional disaggregates can provide a basis for this. Evidence has shown that some institutions are fully optimizing the capacity-development opportunities available in BUILD-IT, while others are not optimizing the opportunity. Reasons for this vary and in some cases provide insights of critical import to the project. Providing disaggregated data on indicators can help USAID understand where evolving areas of strength and weakness are in the innovation ecosystem as it evolves.

11. *Complement M&E reporting with CLA approaches.* The project's quarterly M&E reports provided to USAID include a section on lessons learned. A lessons learned approach is useful, but it takes a traditional rear-view perspective of learning. It also emphasizes explicit knowledge that can be easily conveyed. A real-time, strategic focus on learning as an iterative and continuous process involving multiple system stakeholders can strengthen the project. In particular, a continuous-learning approach could help USAID engage implementing partners and other stakeholders around the tacit knowledge that is a critical but under-considered part of a project's ultimate success or failure.

One simple approach that any individual can leverage to build CLA principles into her/his work is the use of challenge questioning in relationships with others in the network of stakeholders. Such questioning enables individuals to harvest the insights and knowledge that helps make projects and activities more effective. Collaboration-based challenge questions invite local partners or others with critical knowledge to be honest in their feedback and assessment of real issues. Overall, such questions can help focus implementing partners as they try to leverage the insights and perspective of stakeholders in the top, middle, bottom or periphery of the BUILD-IT system.

In addition, some additional BUILD-IT specific learning questions can form the basis of a Learning Agenda to guide Mission oversight of the project from a CLA perspective on an ongoing basis. To be effective, the questions should **not** be considered or answered conceptually, but rather empirically over time based upon emerging evidence and insights from project stakeholders. These questions provide a starting point for a more comprehensive CLA plan that can guide Mission efforts across all its programs and projects. The development of such a plan should be pursued Mission-wide so that learning and adaptive management are pursued in an integrated and strategic manner

Annex X provides some examples of challenge questions and the types of learning opportunities they stimulate, as well as examples of BUILD-IT specific learning questions.

12. *The project AOR should schedule a quarterly project review meeting with the implementing partner.* Also to strengthen CLA approaches in BUILD-IT, the project AOR should also meet with the implementing partner following the receipt and review of the quarterly project report. Before this meeting, the AOR should review the report and consider some probing challenge questions that delve deeper into the details of project implementation, while also exploring alternative ways of how to assess progress. These meetings should not be pro-forma, but rather probing discussions focused on constructive feedback, by challenging underlying assumptions and stimulating collaborative dialogue around ways to improve outcomes. As described in the conceptual framework above, such meetings can help ensure that USAID does its part as validator to understand the development of and challenges inherent to developing the BUILD-IT ecosystem, and would allow USAID to offer feedback that can

keep the project on track towards achievement of expected results. Following this meeting, the AOR should summarize key themes and decisions made in an “implications for project management” memo that becomes part of the report, so that ongoing decisions and adaptations are tracked.

13. *The project AOR should make periodic field visits to partner universities and to industry partners.* The project AOR and other USAID staff should occasionally explore first-hand how BUILD-IT is developing at individual universities. This can help USAID develop a deeper understanding of project implementation beyond the information that quarterly reports alone can provide. At the same time, field visits will reinforce to the universities the level of importance the donor places on achievement of results at the institutional level. As with the quarterly meetings, the AOR or other representative should approach these meetings as opportunities for collaborative dialogue and learning about the challenges and opportunities for capacity growth confronting the university partners. Such an approach can help build the trust needed for extending information and learning pipelines deep into the local systems in which the project operates. Again, challenge questioning can provide the basis for engaging partners and understanding issues from their perspective.

ANNEX I: PERFORMANCE EVALUATION SCOPE OF WORK

Building University- Industry Learning and Development through Innovation and Technology Alliance (BUILD - IT)

Program Summary

The United States Agency for International Development (USAID) and Arizona State University have been working with an alliance of 14 cross-sector partners to promote cooperation among government, private sector, and academic partners in the US and Vietnam. By linking science, technology, engineering and math (STEM) instruction in Vietnamese universities with the needs and capabilities of industry partners, the cooperation is striving to produce university graduates who can lead inclusive and technology-based growth.

- Other BUILD-IT US university partners: Catholic University of America and Portland State University
- Private sector partners: Autodesk, Siemens, Tektronix, Pearson, National Instruments, Microsoft, S.E.N Platform, mobifone, Viettel Group, eSilicon, Intel, Oracle and Everest Education

The project has three components:

- Component 1: Strengthen higher education policy by working with institutions and policymakers to develop and formalize new practices and higher education governance systems accepted institutionally and by the Ministry of Education and Training (MOET).
- Component 2: Enable university and private sector collaboration by developing curricula partnerships, mentorships and industry-sponsored experiential opportunities to build students' professional and technical competencies in preparation for STEM careers.
- Component 3: Improve academic programs and outcomes through the 'Certified Facilitator' program that leverages in-country trainers and distance technologies to create sustainable long-term faculty development and wide-scale implementation of innovation and modern methodologies.

BUILD-IT is partnering with the Vietnam National University (VNU) and University of Danang (UDN) Accreditation Institutes in developing quality assessor training for national impact. Partner institutions will also participate in university, academic program, and course quality training designed in collaboration with the Catholic University of America (CUA), and will establish robust assessment and evaluation systems to support continuous program improvement and international recognition and accreditation.

Evaluation Objectives

- Assess progress towards objectives: analyze the degree to which the activity is progressing towards achieving its goals and objectives;
- Review project strategies for partnership establishment, coordination and management;
- Recommend technical and management adjustments, as necessary, to ensure the project goal can be achieved by the conclusion of Year 5.

Key Evaluation Questions

1. **To what degree is the project on track to achieve planned results at goal level and within key areas: (a) Strengthen higher education policies; (b) Enable university-private sector and collaboration; and (c) Improve academic programs and learning outcomes?**
 - a. To what extent are the theory of change causal linkages relevant to achieving the expected results?
 - b. How are the program activities contributing to the expected results?
 - c. To what extent are the expected results (at different levels) sufficiently captured, monitored and reported?
2. **How is the project multi-partnership approach (university partners, the private sector and Government of Vietnam (GVN)) facilitating the project's progress towards achieving the expected results?**
 - a. To what degree is the current approach effectively identifying and involving relevant and highly committed university partners?
 - b. To what degree is the current approach effectively identifying and involving relevant and highly committed private sector partners?
 - c. Which academic disciplines within STEM stand to benefit the most? Are there ways to focus activities in order to reduce the number of academic disciplines included and to tighten participation?
 - d. To what degree is the Government of Vietnam aware of and supporting BUILD-IT activities? Is there a need to reduce or expand the range of universities in the project, based either on ministry priorities or level of expected involvement of individual schools?
3. **How can project performance be strengthened? (priority focus: streamlining partners, activities, and M&E)**

Specific Tasks

The evaluation team will perform the following key tasks; activities #1, #2, and #3 will form a written evaluation design. The evaluation design will be submitted to USAID/VN for approval prior to the field implementation. Followings are specific tasks of the evaluation:

1. Develop 'Getting to Answer Matrix', including sub-evaluation questions, data/information needed, and data sources. See <http://usaidprojectstarter.org/content/getting-answers-template-0> for further details.
2. Propose mixed methods for data collection, including (but not limited to):
 - Desk study: The evaluation team will conduct a comprehensive literature review of BUILD-IT program- related documents (program description, M&E plan, annual workplans and performance report), as well as other contextual documents;
 - Qualitative (in-depth interviews and/or focus groups with key informants as described in section 3);
 - Direct site observation.

Data collection tools will be developed accordingly.

3. Identify key informants, potentially include (but not limited to):

- BUILD- IT AOR and relevant staff
- Implementing partners and sub-partners (ASU)
- Local university partners: to be selected in consultation with USAID and ASU with regards to
 - i. Different geographic areas
 - ii. Under different management lines
 - iii. Public and private universities
 - iv. Different levels of involvement
- Center for Education Accreditation
- Ministry of Education and Training
- Private sector (foreign and local)
- University students and graduates
- Others (TBD)

4. Conduct in-brief meeting with USAID/VN

The meeting is an opportunity for the evaluation team to present the evaluation design to USAID Vietnam (USAID/VN), and clarify evaluation questions. It is also a chance to learn about the program as well as solicit comments and mobilize support from the mission. Presentation slides, final draft evaluation designs including the 'Getting to Answer Matrix' and data collection tools will be available as handouts at the meeting.

5. Conduct fieldwork

Depending on the desk study and in consultation with USAID/VN, the evaluation team will propose a fieldwork plan, which will be cleared by USAID/VN. USAID Vietnam Evaluation, Monitoring and Survey Services (VEMSS) will coordinate the logistic arrangements for the fieldwork.

6. Develop an analysis plan

The evaluation team leader will be responsible for developing the analysis plan, which is expected to be detailed in the evaluation design. It may include:

- An analysis framework
- Validating theory of change and result framework (including assumptions)
- An appropriate and strong (scientific-sound) analysis technique in accordance with the chosen data collection methods.

The analysis process should involve all members of evaluation team and VEMSS technical staff. It will be carried out throughout the data collection stage, not solely at the end of it. The evaluation team will have five days after the fieldwork concludes to consolidate their findings or, if necessary, perform more in-depth analysis.

7. Host a validation workshop

The key purpose of this workshop will be to present preliminary findings, conclusions and recommendations to the Mission and implementing partners, as well as seek inputs and comments towards validating or challenging findings.

The validation workshop will be conducted before the team begins drafting an evaluation report.

8. Conduct out- brief meeting with USAID/VN

9. Draft and finalize the report

The report will be developed following USAID technical guidance and quality standards (See http://pdf.usaid.gov/pdf_docs/Pnadw117.pdf for details). The team leader will be the focal person for this task with inputs from team members. S/he will be also responsible for finalizing the report after receiving comments from USAID/VN, VEMSS, and the implementing partner.

In addition to the report, the team will develop a reader-friendly evaluation brief that summarizes key findings and recommendations.

Quality Control

The whole evaluation process will be quality controlled by Management Systems International (MSI) and VEMSS. Specifically:

- The VEMSS Chief of Party will oversee all evaluation activities daily, starting with an initial planning meeting on the first day the team comes together, and ending with the submission of the final evaluation report;
- The VEMSS Technical Director or other education specialists from MSI headquarters will be on hand to provide guidance on methodologies, the evaluation design and the draft report. Appropriate checklists will be used to ensure the process complies with MSI Quality Standards and Procedures;
- All deliverables must be cleared by MSI and VEMSS before submitting to USAID/VN.

Deliverables

- Evaluation design and work plans (with technical approaches to implement key tasks described above and data collection tools)
- In- briefing presentation
- Preliminary findings presentation (for validation workshop)
- Draft and final evaluation reports
- 4- page evaluation brief
- Evaluation recommendation tracker

Evaluation Team

The evaluation will be conducted by a dedicated two-person core team. The core team will be supplemented with assistance and support from full-time VEMSS staff. An interpreter will be provided to the team as required (based on the needs of the team).

The evaluation team's core members will include:

- Team Leader/International Expert
- National Higher Education Specialist

International Expert /Team Leader: Will lead the evaluation with specific tasks described above. S/he will also supervise the other team member. Key qualifications include:

- Sound knowledge of USAID programs and an in-depth understanding of the USAID Evaluation Policy.

- Experience with evaluating USAID-funded higher education programs, including a sound knowledge of technical approaches for building higher education programs focusing on applying technology and for developing government and private sector technology partnership programs.
- Experience with the education sector in Vietnam or a similar context is preferred.
- Expertise in quality assurance/accreditation of university programs plus institutional education policy.
- Must have a minimum of a Master's degree in a relevant field, including education system management.
- At least 5 years' experience in performance evaluations of donor-funded projects in Vietnam or Southeast Asia. Prior evaluation team leader experience is highly preferred.
- Native or near-native fluency in English including speaking, writing and reading.
- Proven experience in directing field research, including conducting key informant interviews, focus group discussions and surveys.
- Excellent qualitative and quantitative data analysis and report writing skills.

National Higher Education Specialist- Team Member: the national expert will: 1) provide background information on the education sector in Vietnam; and 2) be involved in all evaluation tasks as designated by the team leader. Key qualifications for this position include:

- Strong experience with and understandings of the higher education sector in Vietnam is a must;
- Experience evaluating internationally funded higher education programs, including a sound knowledge of technical approaches for building higher education programs focusing on applying technology and for developing government and private sector technology partnership programs.
- Expertise in quality assurance/accreditation of university programs plus institutional education policy is a preference;
- Must have a minimum of a Master's degree in a relevant field, including education systems management;
- At least 10 years' experience in performance evaluations of donor-funded projects;
- Fluency in English including speaking, writing and reading;

Timeline:

Activity	Due date
Draft and Finalize Evaluation SOW	Feb 27
Team recruitment	Mar 9
Desk study	Mar 15
Evaluation design	Mar 16
In- brief meeting with USAID/VN	In the week of Mar20
Fieldwork	Mar 27 - Apr 7
Analysis	Apr 10 – Apr 14
Out- brief meeting with USAID/VN	Apr 20
First draft of the report submitted	Apr 28
Comments/Inputs from USAID/VN and IPs	May 12
Final report submitted	May 22

ANNEX II: EVALUATION METHODOLOGY¹¹

Evaluation Approach

Since the evaluation is meant to assess BUILD-IT progress towards project objectives as well as how this progress can be strengthened and/or augmented, a primarily qualitative research approach is warranted.¹² Qualitative methods are ideally suited to answer the “how” and “why” questions that underpin the process of project implementation. To enact this qualitative design, the evaluation team drew on a variety of data collection methods including semi-structured key informant interviews, group interviews, observation and document review.

The evaluation team analyzed data through semi-grounded assessment methods. As a methodological approach, grounded theory methods are designed to develop theories of operation that are anchored in local context. In the BUILD-IT evaluation, grounded assessment methods used a systematic, inductive and constantly comparative approach that relied on secondary sources, semi-structured key informant interviews, group interviews and direct site observation to reconstruct baseline information and to determine how the project is affecting change. The team undertook *content* analysis of these diverse data sources to identify “exemplars” that fit into categories or themes. In the case of BUILD-IT, “exemplars” are pieces of data that illustrate instances of how different activities in the project interact to *contribute* to (or perhaps detract from) attainment of project objectives. Coding of such “exemplars” into conceptual categories helped build understanding of how effectively each activity is contributing to progress across participating universities. While assessing how change has occurred, if at all, the evaluation team also used *beneficiary* assessments in its interviews with stakeholders to understand beneficiaries’ perceptions of the value of BUILD-IT activities and interventions.

Content Analysis: The evaluation team used content analysis to identify themes and trends relevant to each evaluation question and to better understand the meaning of and context in which statements were employed. Content analysis is the most common approach for extracting patterns from open-ended survey questions and from transcripts of key informant interviews.

Contribution Analysis: The team used contribution analysis to better understand the extent to which BUILD-IT project activities are contributing to observed changes. Each of the project activities is premised on an implicit or explicit causal logic as reflected in its results framework—i.e., a logical description of how the activities yield specific results/changes. Contribution analysis involved assessing whether there are observable results/changes and how much the activity has contributed, vis-à-vis other factors, to these results/changes.

Beneficiary Analysis: The team used beneficiary analysis to better understand key aspects of sustainability. This evaluation used the definition of sustainability provided in USAID ADS 201: “The ability of a local system to produce desired outcomes over time. Programs contribute to sustainability when they strengthen the system’s ability to produce valued results and to be both resilient and adaptive in the face of changing circumstances.” Beneficiary analysis strives to provide evidence for the *value* of results to the beneficiaries.

¹¹ The full evaluation design document, including interview protocols, is available from the USAID/Vietnam Evaluation, Monitoring and Survey Services (VEMSS) Project.

¹² Maxwell, J. (2013). *Qualitative Research Design: An Interactive Approach*. Los Angeles: SAGE Publications.

Selection of Key Informants

Document analysis, key informant interviews, group interviews, and both participant and structured observation were the primary means for data collection, based on the types of data needed and the ideal means through which to obtain those data. The evaluation team employed a purposive approach to reach critical stakeholders at all levels. The implementing partner provided a list of stakeholder institutions for the project, which the donor reviewed. Of the 32 entities on that list, the team contacted 30 and eventually interviewed 22. The project reached out to nine of the 11 universities involved in the project and was able to collect data from all nine, but the number of interviews at each varied.¹³ The evaluation team also conducted multiple interviews with the implementing partner teams.

Data Collection

The evaluation team reached out to stakeholders identified by the BUILD-IT project. This included university, industry and government partners. Additionally, the project reviewed documents provided by the implementing partner. Table 1 provides a breakdown of key informant and group interviews, and Table 2 provides a breakdown of the team's document analysis and direct observation.

TABLE 1: KEY INFORMANT AND GROUP INTERVIEWS

Stakeholder	Number of Interviews
GVN	4
University leaders and senior administrators	7
Faculty (group interviews)	5
Students (group interviews)	4
Quality assurance professionals	6
Industry partners	6
Implementing partners (prime and sub-contractors)	8*
USAID	1
Thematic	3
Total	44

*Two interviews with key implementing partners occurred later in the data collection process, so those interviews included questions to probe themes emerging from others sources.

TABLE 2: DOCUMENT ANALYSIS AND OBSERVATION

Data Source	Number of Documents or Observations
Document analysis (project agreement, industry partner letters of intent, university partner MOUs, university summary updates, M&E and other reports)	30+
Direct site observation (Maker Spaces)	2
Participant observation (first and last day of policy workshop)	2

¹³ There are a total of 11 university partner MOUs for the BUILD-IT project. One of these MOUs is a joint MOU, signed on behalf of the University of Da Nang, the University of Da Nang – University of Science and Technology, and FABLAB Da Nang. Some documents refer to 12 participating universities; in these cases the University of Da Nang and the University of Da Nang – University of Science and Technology are being reported separately.

Data Source	Number of Documents or Observations
Validation workshops (USAID and implementing partner)	2

Data Coding and Analysis

To realize the constant comparative method that underpins semi-grounded approaches, the evaluation team regularly reviewed emerging findings:

Daily Interpretive Review: At the end of each day of fieldwork, evaluation team members reviewed their interview notes against each evaluation question and the corresponding research questions to determine what they deemed to be the most important information and insights gained from the research conducted that day. This approach served three analytical purposes:

- It allowed evaluators to capture, contemporaneously, their insights and understanding from each interview with full consideration of the context of the discussion so that this information was not lost.
- Capturing this information acted as a valuable learning tool prompting the evaluators to reflect on what had been learned. Such reflections informed subsequent interviews.
- The regular documentation of key information facilitated faster and more efficient data analysis at the conclusion of the fieldwork, including through developing and refining draft evidentiary findings during the fieldwork for consideration at the conclusion.

Weekly Emergent Review: At the conclusion of each week of fieldwork, the evaluation team collectively reviewed the evidence collected and coded to date to identify potential data gaps and avenues for deeper consideration and exploration in subsequent data collection. At the end of the field research, the team collated the documented evidence against each evaluation question and its corresponding research questions (this process also provided a management function, allowing the Vietnam Evaluation, Monitoring and Survey Services [VEMSS] Chief of Party to regularly monitor the evaluation team's progress).

Data Coding: Starting simultaneously with data collection, data coding involved a two-cycle process that sharpened in focus as data were collected and progressively analyzed.¹⁴ In the first cycle, coding began deductively, using a provisional set of codes developed by the evaluation team based upon the evaluation questions, results and conceptual frameworks, as well as sustainability factors.

As the initial data sets were coded and axes of commonality identified, additional codes were identified to capture how the BUILD-IT ecosystem is shaped based upon the interplay of the different parts of the frameworks. Techniques deployed in the inductive coding phase included:

- **Process coding** to capture observable and conceptual action in the data;
- **Descriptive coding** to summarize a basic topic discovered in the data;
- **Values coding** to reflect respondents' attitudes or perspectives on an issue; and
- **Emotion coding** to capture respondents' experiences and actions around critical issues.¹⁵

As data collection and first-cycle coding wound down, a second coding cycle commenced where existing codes were grouped or collapsed into a smaller number of codes based upon recurring themes,

¹⁴ Miles, M. B., Huberman, A. M. and Saldaña, J. (2014). *Qualitative Data Analysis: A Methods Sourcebook*. Thousand Oaks: Sage Publications.

¹⁵ Miles, Huberman and Saldaña, J. (2014). p. 74-75.

common causes of or explanations for phenomena, emerging relationships across stakeholder groups, and theoretical constructs.¹⁶ Second-cycle coding is more conceptual than the initial coding processes, and it formed the bases for the purposeful and theoretical sampling of respondents that enabled the investigators to examine certain categories of data (emerging issues) more deeply.

Data coding and analysis was facilitated by use of Dedoose data analysis software package. A total of 991 excerpts of data from interview notes, observation notes and documents were coded and analyzed.

Limitations

The team approached the evaluation with as much methodological rigor as possible, though there are certain limitations which may have an impact on findings. Ideally, qualitative inquiries should be based on prolonged investigation in the field. Resource constraints limited this possibility. Potential limitations to consider include:

Inability to Demonstrate Attribution. Since the evaluation did not include a counterfactual (control/comparison group) as part of an experimental or quasi-experimental design, the findings do not support strong causal inference. Thus, it is not possible to rigorously determine causality for identified outcomes.

Project Timeline. Though the project is in year 2 (Y2) of implementation, activities intended to develop the capacity of partner universities started late in Y1. Because many of those activities are still in process, outcomes have not yet been fully realized. Initial activity implementation only began in the final quarter of Y1, and the key activities that were underway at the start of the evaluation only began several months earlier.

Assessing Sustainability: Since the sustainability of an intervention can only be verified ex-post, the methods used to assess sustainability focused on factors that theoretically would contribute to the sustainability of the intervention. Not all project activities have been fully launched at the universities. Most activities that have launched are still midway through implementation. Therefore, answers to evaluation questions related to sustainability describe the likelihood of sustainability based on stakeholder perceptions.

Respondent Bias: Key informants constituted the primary source of information in answering all evaluation questions. Although the evaluation team triangulated as much of the data as possible, interview data is subject to cognitive biases, including recall bias. To strengthen the validity and reliability of the findings, the evaluation team systematically triangulated data from interviews, documents and observation; used the constant comparative method, follow-up thematic interviews and validation workshops; and made its best efforts to select an appropriate range of interview participants. These measures reduced the potential for bias across the research.

Reaching Key Informants: Each of the universities involved in BUILD-IT are different in terms of focus, needs and resources. The evaluation scope did not require the evaluation to deeply investigate institutions individually. Nonetheless, the team made rigorous and repeated attempts to reach out to as many project stakeholders as possible, based upon the stakeholder list provided by the project. This included governmental, academic and industry partners. Particularly within universities, the team worked to secure interviews with as many internal stakeholder groups as possible, including leaders, senior administrators, quality assurance staff, faculty and students. Despite of the team's effort, a few

¹⁶ Miles, Huberman and Saldaña, J. (2014). p. 87-88.

universities—especially in the North—were less willing to allow these multi-level stakeholder meetings than others.

ANNEX III: SUMMARY OF EVALUATION FINDINGS

Finding 1: The project is advancing steadily in implementing Activity 2 (Leadership Development for Effective Policy Makers) under Objective 1. Needs have been assessed and universities are engaged around developing policies to meet what the project calls the “wicked challenges” identified by the assessment and confirmed by university leaders.

Finding 2: The project reported exceeding its Y1 target for executive leaders trained. In Y2 it is still working towards achieving its annual target. The project team has made an effort to increase and focus on university participation in the policy workshops.

Finding 3: Participation by university leaders in the Activity 2 policy workshops is not at expected levels as stated in MOUs.

Finding 4: It is still too early to determine the impact of Activity 2 on publication of new policies or revision of existing policies at the partner university level (Indicator 7). Rectors are not participating directly in the policy development seminars as originally designed. Therefore, it is difficult to make a firm determination on the impact of training on participant ability to develop and update university policy (Indicator 6).

Finding 5: On an aggregate basis, the project exceeds targets for personnel participation in quality, pedagogy and curricular innovation training. Disaggregation of participation data on an institution by institution basis reveals very uneven levels of engagement by partner universities.

Finding 6: The value placed on curriculum spine training is generally good, though some stakeholders report challenges in implementation. Inconsistent expectations on the purpose and target audience of quality assurance seminars has resulted in some dissatisfaction among stakeholders.

Finding 7: The initial results for accreditation results being achieved through the program align with accreditation targets identified in the university partner MOU's. However, these achievements are not necessarily correlated to the accreditation training that has been offered in the project.

Finding 8: University-private sector collaborations have started to provide opportunities that engage students (and faculty) in national competitions, Women in STEM advocacy and hands-on learning.

Finding 9: Students at partner universities are largely not aware of BUILD-IT and the opportunities it is providing to faculty and indirectly to them in enhanced learning opportunities to improve their workforce readiness. Though some students have awareness of or experience with different competitions affiliated with the project, they are unaware that it is connected to a larger initiative that their university participates in. Additionally, improved workforce readiness appears to be more of a conceptual rather than real need among students and faculty.

Finding 10: Universities appear to struggle with some of the university-level Women in STEM obligations they have in the project. The project is seeking ways to guide partner universities to identify ways to collaborate on campus-level initiatives that will build support for women.

Finding 11: The implementing partners highlight the planned Maker Spaces a key feature of the project that will provide students, faculty and industry partners to collaborate around hands-on learning. Universities and industry partners seek more information about how the Spaces will be integrated into the project given the limitations around the resource.

Finding 12: Implementing partners and USAID feel that it is too early to make a definitive assessment on the validity of the results framework given that all components have not yet been fully engaged. For the moment they feel that the framework is sound.

Finding 13: Comparison of the results framework to descriptions in project documents and data emerging from key informant interviews with other stakeholders suggest there are several areas of the framework that should be reviewed at this early stage of implementation.

Finding 14: Assessing activity contribution from the perspective of actual university attendance at activities gives a different perspective on activity contribution to results at the university level. Also, the project appears to take more of a coordinated approach to activity implementation that makes it difficult to identify and address the specific implementation challenges of partner universities.

Finding 15: The project is reporting results in the manner requested by USAID at the outset of the project, while adapting reporting based upon further requests by the donor. Disaggregating results by partner institution and stakeholder can give USAID a more focused understanding of project successes and challenges as they emerge during implementation.

Finding 16: The implementing partner has assembled an impressive group of academic, industry and governmental partners to support the project. Two of the three platforms meant to support the alliance – the HELIX Portal and the Maker Innovation Lab Network are at earlier stages of implementation. The Stakeholder Councils have been launched but they have been implemented differently than originally intended.

Finding 17: In assembling a group of university partners from across Vietnam, ASU has leveraged the relationships it has developed through its past programs in the country, while expanding to include new institutions. Engagement tends to be stronger in institutions where the implementing partner has a relationship history.

Finding 18: The implementing partner has identified and involved a strong roster of industry partners that appear very committed to supporting the attainment of project results. Partners are very interested in working with university stakeholders and look forward to their involvement in the ongoing implementation of BUILD-IT.

Finding 19: The project focus is broad and there is no clear articulation of specific programs from a capacity building perspective. The project spine offerings appear to focus more on technology and engineering subjects. There does not appear to be consensus on reducing academic disciplines in the current program structure.

Finding 20: Representatives of the Government of Vietnam express awareness and support of BUILD-IT activities conceptually. The project highlights its engagement with multiple parts of the Government, however, there is disagreement among stakeholders in the project concerning how MoET can and should be involved.

Finding 21: Government and university stakeholders are consistent in their desire for BUILD-IT to expand and not reduce the number of universities in the project, but they recognize that this is unlikely given limited resources. Increasing the number of partners without increased resources could dilute impact. Decreasing the number could also have negative effect outcomes.

Finding 22: Leadership and internal politics within institutions seem to be the primary reasons why a partner university succeeds or struggles. Progress also depends on relationship building between the implementing partner and the university.

Finding 23: Stakeholders sometimes face internal challenges in engaging in the opportunities for learning in the project, and the project works with them to aid in this effort. However, a deeper more

collaborative approach to university partner engagement could help strengthen these efforts, particularly with universities that struggle in BUILD-IT.

Finding 24: The project has introduced some effective mechanisms to boost knowledge sharing and cross-fertilization of success factors. Deeper relationship building across all levels of the project is also crucial to achieving success.

ANNEX IV: SUMMARY OF BUILD-IT INDICATORS

As of Year 2

<i>1. Number of host country tertiary institutions receiving capacity development support with USG assistance</i>
<i>2. Percentage of females reporting increased self-efficacy at the conclusion of USG supported training/programming.</i>
<i>3. Number of tertiary institution faculty or teaching staff whose qualifications are strengthened through USG-supported tertiary education programs.</i>
<i>4. Number of dollars leveraged in GDAs and Innovative Partnerships.</i>
<i>5. Number of Executive Leaders trained.</i>
<i>6. Percentage of participants who are prepared to develop and update university policy as a result of training.</i>
<i>7. Percentage of participating institutions who publish new or revised institutional policy documents (meets or exceed policy training criteria)</i>
<i>8. Number of higher education personnel trained in Quality, Pedagogy and Curricular Innovation.</i>
<i>9. Percentage of participants self-reporting preparedness to implement training.</i>
<i>10. Number of STEM programs with developed and implemented CPI (Continuous Program Improvement) for academic program assessment and evaluation.</i>
<i>11. Number of targeted STEM programs achieving national, regional or international accreditation.</i>
<i>12. Number of STEM students participating in hands-on project-based curriculum.</i>
<i>13. Number of students and faculty participating in Women in STEM initiatives.</i>
<i>14. Percentage of female participants reporting confidence in perceived ability to enter/complete STEM programs.</i>

ANNEX V: ACTIVITY ATTENDANCE BY PARTNER UNIVERSITIES

(Based on attendance data provided by the implementing partner)

TABLE A: ACTIVITY 4

Year 2 Attendance at Quality Systems Events								
	Former HEEAP	Accred Goal	QA Workshop Year 1	QA Workshop Nov 2016	Coaching Feb/Mar 2017	PQA Workshop Feb 2017	IQA Workshop Feb 2017	Total Participants
<i>Can Tho University</i>	Y	2	7	4		2	1	14
<i>Da Nang U of Science & Tech</i>	Y	11	11	5				16
<i>HCMC University of Technology</i>	Y	2	7	2				9
<i>HCMC University of Technology and Edu</i>	Y	14	23		26	30	1	80
<i>Industrial University of HCMC</i>	Y	9	21	59	5	13	2	100
<i>Lac Hong University</i>	N	2	13	12	8	6	3	42
<i>Post and Telecommunications University</i>	N	5	5	5		7		17
<i>VNU HCMC International University</i>	N	10	5	6	8	5		24
<i>VNU HCMC University of Science</i>	N	4	13			2	1	16
<i>VNU HN Univ of Engineering and Tech</i>	N	4	5				1	6
<i>VNU HN University of Science</i>	N	4	26				16	42
<i>Total Partner University Attendance</i>			<i>136</i>	<i>93</i>	<i>47</i>	<i>65</i>	<i>25</i>	366
Total Universities Attending				7	4	7	7	

TABLE B: ACTIVITY 6

	Former HEEAP	Oracle Discovery (Yr 1)	Maker Forum Nov 2016	Robotics Feb/Mar 2017	Project Spine Feb 2017	Amazon Workshop	Total Participants
<i>Can Tho University</i>	Y		19			6	25
<i>Da Nang U of Science & Tech</i>	Y			8		25	33
<i>HCMC University of Technology</i>	Y			12		2	14
<i>HCMC University of Technology and Edu</i>	Y	3		24	11	24	62
<i>Industrial University of HCMC</i>	Y			4	7	2	13
<i>Lac Hong University</i>	N	5		7	12	8	32
<i>Post and Telecommunications University</i>	N			1			1
<i>VNU HCMC International University</i>	N	5					5
<i>VNU HCMC University of Science</i>	N			3		3	6
<i>VNU HN Univ of Engineering and Tech</i>	N		6	1			7
<i>VNU HN University of Science</i>	N			1	1		2
<i>Total Partner University Attendance</i>		13	25	61	31	70	200
Total Universities Attending		3	2	9	4	7	

ANNEX VI: INDUSTRY PARTNERS IN-KIND & CASH CONTRIBUTIONS

(Compiled from industry partner commitment documents)

Partner	Contribution	Type	Value
Saigon Hi-Tech Park (SHTP)	1. Industry - Government - Round-tables Education Solutions Roundtables: Willing to host six- Education Solutions Industry - Government -Round-tables Education Solutions Round-tables including: Workforce Competencies, Implementing Quality (IQ), Curriculum Innovation, Faculty Innovation, Technology, and Institutional Policy 2. Maker Innovation Lab Network: Provide space about 500 Network m² for one Maker Innovation Lab in Saigon Hi-Tech Park Incubation Center (SHTP-IC). Our Incubation Center fully supports this Maker innovation Lab. 3. Higher Education Learning & Innovation Exchange Portal (HELIX): Actively involve Learning and approximately 40 Innovation Exchange companies to participate Portal (HELIX) in HELIX. SHTP will collaborate with ASU to organize training workshops for companies at SHTP.	In-Kind	No Dollar Amount Established
Autodesk	1. Free Educational licenses for Autodesk Software (Product Design Suite & Building Design Suite)	In-Kind	\$724,500,000
eSilicon	1. Project Sponsorship Activity and support of Semi-Conductor curriculum development or education agenda through inputs from eSilicon Subject Experts	Cash	Up-to US \$5,000 per annum with total of \$25,000 over 5 years
Intel	1. 150 Intel Galileo Boards as platform for student innovation 2. Leveraging Programs and Initiatives to support BUILD-IT	In-Kind	No Cash Value Established
Meetech	1. Industry - Government - Round-tables Education Solutions Roundtables: Willing to engage actively in Roundtable activities 2. Maker Innovation Lab Network: Provide support with patent registration for innovations	In-Kind	No Cash Value Established

	made by Maker Innovation Lab. Provide 3D printers and printer supplies at a discount. Provide maintenance to printers and training. Provide technical support to Maker Innovation lab. Support joint research. 3. Higher Education Learning & Innovation Exchange Portal (HELIX): Collaborate with ASU in providing training service to companies in HCMC.		
Microsoft	1. Participation in Workforce Competencies Roundtable 2. Participation in Technology Roundtable 3. Participation with SHTP Microsoft Innovation Center branches to provide software, training and hands-on labs at the Maker Innovation Labs for students and developers. 4. Provide Microsoft Azure 3-month trial for Pearson Education, if desired. Once trial succeeds, provide Microsoft Azure BizSpark Plus 1-year subscription for Pearson Education @ \$5000 month if qualified.	In-Kind	1. \$1000 2. \$1000 3. \$100,000 4. \$600-\$60,000 Total Estimated Value: \$162,000
Mobifone	1. Nominating experts as speakers panelists in the conference, workshop, roundtables organized by the alliance. 2. Contributing to curricular program hosting delegations to companies for surveys about demand and satisfaction evaluations. 3. Participating in skill development programs for student by short-training courses, seminars, talk shows. 4. Granting for students projects, student competitions.	In-Kind	1. \$5,000 2. \$3,000 3. \$50,000 4. \$10,000 Total Estimated Value: \$68,000
National Instruments	1. Sponsor innovation competition: Free loaned software, hardware, training, mentorship to selected top ideas, co-marketing and prizes 2. NI myRIO devices: Embedded design devices	In-Kind	1. \$25,000 (max) 2. \$65,850

	for students 3. Additional discount on lab stations from recommended configuration 4. ASL Teaching & Research: Unlimited license for teaching and research for each center 5. Software upgrade and maintenance fees 6. Professional training courses on NI tools 7. On line tech support access for start-up assistance 8. Access to advance online training classes 9. Partnership Management: Part time of 3 NI team members 10. In-kind hardware, software and services for start-ups		3. \$178,878 4. \$107,184 5. \$33,725 6. \$4,500 7. \$14,500 8. \$7,500 9. 21,000 10. 286,500 Total Estimated Value: \$744,637
Oracle	1. Training up to one hundred (100) instructors from the list of higher education institutions in Vietnam accredited by ASU (we understand that there are currently 50 of such institutions on the list) within a period of 24 months 2. Participation of Oracle subject matter experts in Technology Roundtable in the following areas: • Application Architecture for University • Campus Solution • University Administration (ERP) • Higher Education Analytics (DWH/BI)	In-Kind	1. No Dollar Amount Established 2. No Dollar Amount Established
Pearson	1. Moodle platform 2. Moodle Hosting 3. Moodle configuration & content repository integration, badging system integration 4. Moodle training 5. National Innovation contest 6. Moodle platform support 7. People Resource Workforce Readiness Expert	In-Kind Cash In-Kind	1. \$0.00 2. \$300,000 3. \$165,000 4. \$40,000 5. \$50,000 6. \$75,000 7. \$50,000

	8. People Resource: Educational Learning Council (in region)		8. \$50,000 Total Estimated Value: \$730,000
Sen Group	Technologies in Online Personalized Teaching System and Common Core Aligned Content Management	In-Kind	\$100,000 (max)
Siemens	PLM Software grants to all the Vietnamese Engineering schools joining this alliance.		No Dollar Amount Established
Tektronix	1. Test and measurement equipment for the Maker Innovation Labs (Sharing 1/3 of Equipment Price) 2. Test and measurement equipment for the Universities (Sharing 1/3 of Equipment Price)	In-Kind	1. \$100,000 2. \$200,000 Total Estimated Value: \$300,000
Viettel	1. Nominating experts as speakers, panelists in the conference, workshop, roundtables organized by the alliance. 2. Contributing to curricular program innovation by hosting delegations to companies for surveys about demand and satisfaction evaluations. 3. Participating in skill development programs for students through internships at company sites. 4. Granting for students projects, student competitions.	In-Kind Cash	1. \$5,000 2. \$3,000 3. \$10,000 4. 5,000 Total Estimated Value: \$23,000
	Total Cash Value (Note: Does not include in-kind contributions where industry partner did not specify cash value)		\$2,877,137

ANNEX VII: SUSTAINABILITY OF PROJECT RESULTS

Question 1c of the evaluation asked: ***What conditions are needed to ensure sustainability of expected results? Is there evidence that these conditions exist or are in the process of being established?***

Because various project activities build off of each other and a number of activities under the project have yet to be launched comprehensively, it is difficult to make determinations of sustainability. In terms of the contribution and value of activities to stakeholders who will ultimately effect change, only evidence regarding *perceptions* of future sustainability can be considered, since only parts of the project have been implemented.

Finding: The project is delivering high-level training and other means of support to the universities as described in the project design. There is not yet clear and consistent evidence that these efforts will result in sustainable change across all partner universities.

Evidence

Objective 1 – Policy Development

- Interviews with the local BUILD-IT team indicated that efforts at building capacity gain the most support in the institutions where the senior leadership explicitly engages in the project.
- Vice rectors who attended the Leading Policy Formulation seminar argued that they are empowered to develop and implement STEM policies at the divisional levels they lead. Nonetheless, in a follow-up interview following the conclusion of the seminar, the activity lead indicated that he remains concerned about the project's ability to achieve *sustainable systemic change* across STEM universities overall unless rectors are engaged more strategically than they are now:

“Something really needs to be done to wake up the universities about the realities of university autonomy. This is why I keep saying that getting the university leaders together with MoET is a critical need. The missed need is not just policy, but a more encompassing initiative around good governance. Governance is much more than policy. It must change mindsets to develop a culture of leadership that embraces accountability, transparency and intentionality. That effort can be approached top-down or bottom-up, but ideally it should be approached both ways to ensure resilience.”
- Previously presented data on the composition of university “policy innovation teams” raises the question of whether the level of participants on the teams is consistently high enough to contribute to sustainable change at their respective universities. Close monitoring of both the self-reported efficacy of these team members to implement what they learn in the seminars (Indicator 6) can give some indication. Additionally, within Activity 2 itself, close monitoring of the policy teams’ ability to demonstrate that they are iteratively advancing policy development at their respective universities is critical.
- Observation of the first day of the Leading Policy Formulation seminar revealed significant variance in the quality of analysis conducted by university teams to prepare for the seminar. The activity lead rank ordered presentations based on the quality of analysis undertaken to identify institutions’ policy priorities. Of the nine university teams participating, about one-third demonstrated a rigorous approach to assessing priorities, including conducting surveys, interviewing rectors and deans and additional research. As the report outs progressed, the

quality and rigor of analysis dropped. Though the participants are still in learning mode, the varying ability of different teams to apply what they had learned in the prior seminar offers some potential insights into the policy innovation teams' abilities to effect sustainable change at their institutions. This is further compounded by the fact that the majority of the teams referred to the work they had done between workshops as "homework" and not part of their respective universities' policy development efforts.

- Observation also demonstrated the value in having former HEEAP and non-HEEAP universities together in project activities. Participants from former HEEAP universities took a strong mentoring role towards other universities as they shared their experience in capacity building. This collaborative approach to development can help reinforce the sustainability of the policy development process once the active training ends.
- In a debriefing on the seminar, the activity lead noted that in discussion the day before, a former HEEAP participant noted to the others in the seminar that based on their experience, "It takes five to 10 years to develop the change culture needed to build sustainable institutional capacity." The activity lead reflected on this following the workshop, and noted there is more work to be done to get these "teachable moments." As the project continues to be implemented, such moments will emerge. The critical thing to do is to ensure that the project activities are sufficiently integrated laterally so that opportunities for teachable moments can be identified and exploited, and persistent gaps and challenges addressed.
- Activity 2 is currently scheduled to conclude at the end of Y2. Evidence from the latest quarterly report as well as interviews with members of the implementing partner team indicated that the project may extend work related to Activity 2 longer.

Objective 2 – Academic Programs and Learning Outcomes

- Uneven attendance at workshop events as indicated earlier in this analysis raises questions regarding the project's ability to strengthen capacity in academic programs and learning outcomes in a sustainable manner. Evidence indicates that thus far, university partners are not consistent in the degree to which they engage in, or are engaged by, the project.
- Representatives of several universities indicated that once the universities receive the work plan, they often struggle to free staff's schedules to attend the workshops.
- Four of the six industry partners interviewed suggested that the project should have a more explicit and systematic linkage across the different curricular components of the project. A consistently understood thread of knowledge and experience should link the content of workshops and conferences, but their current perception is that that thread is not explicit. For example, in one industry partner interview, the interviewee was unaware of many of the components of the project, and as the evaluator described them, the interviewee expressed the regret that the implementing partner did not explain more about the project, so that the industry partner could suggest different ways her firm could support other activities. The original design of the Solutions Councils was intended to promote this integration on a strategic level, as university and industry partners actively discuss and adapt activities based upon emerging issues and needs at the universities. Evidence indicated that thus far this has not happened. On a more internal, tactical level, evidence also indicated that activity leads do not have significant opportunity to identify opportunities for lateral integration of their respective training activities, so that issues covered in one area are directly related to what has been covered in other areas.
- In all faculty interviews, participants expressed the desire for continued opportunities to engage directly with industry partners in order to help them embed their learning in real issues that will

help them turn their knowledge into practices that will improve student learning. Faculty interviewed who had attended workshops placed high value on the opportunity to engage with industry representatives around problem solving. Industry partners that have engaged in training through the project also placed high value on the opportunities they had to engage directly with faculty.

Objective 3 – University-Private Sector Collaboration

- Of the project's three objectives, Objective 3 is currently the most difficult to assess from a sustainability perspective, since thus far the bulk of effort on university-private sector collaboration has been for national-level events. Efforts on the micro level of university capacity have not yet been fully engaged.
- Additionally, sustainability of efforts for Objective 3 is interconnected with capacity development in the other objectives of the project: Successful utilization of Maker Spaces is interconnected with improvement of curricular and instructional quality, while university campus-based mentoring opportunities for Women in STEM are interrelated with policy development capacity.
- The most straightforward means of assessing the sustainability of Objective 3 at this point in the project is to consider the perceptions of the two stakeholders most directly involved. Specifically, this means industry partners and students.

Industry Partners: Interviews with industry partners revealed the following regarding their interest and ongoing involvement in the project:

- A full two-thirds of industry partners interviewed were clear that they wish to see clear improvement in the way universities prepare graduates as a result of their involvement with the project. Partners were clear that they are making a commitment to the project in the expectation that it will lead to results. As one noted:
"We feel we are gradually starting to see benefits, but we are looking forward to seeing curricular change and utilization of the Maker Spaces at the universities, so we can assess our ongoing involvement with the project. We only seek to be involved when something aligns with our company's short- or long-term goals. Workforce readiness is something we wish to improve in Vietnam, because we recruit here, so we are very committed to that. Our interest in improving workforce readiness is the basis for our agreeing to be involved in Solutions Councils."
- All six industry partners interviewed were clear in stating that they had some concerns about the focus of the project in YI because of poor communication. Inability to get timely and adequate responses to inquiries and concerns surrounding poor attendance at events were some of the highlighted issues that caused them to raise this concern. All were clear that the situation has improved significantly due to some local personnel changes, but they also were clear that their ongoing involvement depends on the project's ability to deliver on its commitments and make a difference at universities. Specific evidence for this is presented in detail in the section on assessing the multi-partner approach.
- Four out of six industry partners interviewed indicated that they seek to work directly with universities in order to help them develop their capacity for improved workforce readiness.

Students: Though the project does not directly train students, as the ultimate "product" of workforce readiness student engagement is critical to BUILD-IT's sustainability. In the four group interviews conducted with students, respondents gave a perception of needs and issues that was very different from perceptions gleaned from other stakeholders:

- In the area of workforce readiness, students in all interviews were interested in opportunities to improve their hands-on skills, and were supportive of any opportunities that improved the quality of curriculum and instruction in their programs.
- Students also conveyed that they did not consider their current level of preparation as a significant impediment to their ability to obtain jobs. Most felt that all but the poorest-performing graduates obtain jobs within several months of graduation.
- As previously reported, students were unaware of the existence of BUILD-IT and the impact it was meant to have on their learning and career preparation. When they had been involved in an activity related to the project (mainly competitions), they were unaware of the connection.
- One issue that was raised across different groups but not deeply in any one group was the nature of student motivation for participation in competitions. Students may be less interested in the opportunities that winning gives than they are in the prize money. As one partner with experience with competitions noted:

“Competitions are good at stirring interest and engaging teams. We are learning that the focus is often on getting the prize money, not on developing a solution that can be taken further. We are looking at ways to keep the development going. We would like to collaborate with industry partners on developing a support package to continue the innovation momentum after a contest ends. Focus on the short-term ‘winning the prize’ rather than the long-term career goals is something that should be considered by the project.”

- In two of the student interviews, respondents indicated that one way the project can attract more students to BUILD-IT is to increase the prize money offered.
- Students became more intrigued as they learned about the different components of the project. In particular, opportunities to learn in Maker Spaces motivated them once they understood more about them. The opportunity for direct collaboration with industry partners in the spaces could be a point of leverage to engage students into BUILD-IT’s goals more purposively.

Conclusions:

- It is too early to make a firm determination on the sustainability of results across the project, since not all activities have started, and those that have started are at best midway through their intended timelines. Most activities focused on building capacity are iterative in their approach, and many are interconnected. As one implementing partner noted, “It takes time to get the train moving.”
- Universities are in the middle of a learning process that is gradually gaining momentum; therefore, the impact of the learning cannot yet be fully assessed. Until that process advances further, realistic assessments of sustainability cannot be made.
- Some questions are emerging about the focus and commitment of individual partner universities involved in the project. Some university partners demonstrate strong commitment to making the most of resources offered through the project, while others appear less committed.
- Attendance rates at project events are one indicator of institutional commitment. Similarly, limited rector engagement in the policy development process at some universities raises the question of commitment. It is important to note that some universities indicate that they struggle with meeting commitments under the project’s existing planning process and structure for activity participation.

- The project takes a primarily top-down approach to activities through workshops, but complements that approach with coaching circles and one-on-one support to universities as they work to implement their learning from the workshops. This does not account for universities that are struggling to engage in the activities. A more bottom-up approach to help stimulate university engagement could help make the project results more sustainable.
- Beyond the commitment of individual universities to seize the opportunity that the project presents, evidence suggests that the project itself can strengthen the sustainability of outcomes by being purposeful in continuously building awareness of BUILD-IT across all stakeholders that it touches, while also being more explicit in terms of how the components connect towards building resilient outcomes that will benefit all engaged. This is particularly important for industry partners that wish to see results from the time and resources they commit to the project.

ANNEX VIII: STAKEHOLDER PERCEPTIONS OF REAL BENEFITS

Question 2c of the evaluation asked: *How do different stakeholder groups (private sector partners, faculty and students) perceive real benefits of participating in the program? To what extent do stakeholders perceive that the workforce readiness of students has improved under the project?*

***Finding:** Stakeholder groups all perceive real benefits to participation in the project. University stakeholders focus on the opportunity to engage with industry partners and to benefit from practical training. Industry partners see benefit in engaging directly with universities to improve the workforce readiness of graduates and, in some instances, expand the market for their products or services. However, because not all activities and resources have been fully launched, perceptions are primarily of future benefits.*

Evidence:

The benefits perceived by different stakeholders have been discussed in other findings sections. Following are summaries of the perceived benefits by key stakeholder group:

- **University Leaders/Administrators:** University leaders and senior administrators consistently highlighted the opportunity to work with industry partners and opportunities for training of as the main benefits to participation. Changes in the higher education laws of the country are creating an environment where institutions will need to compete with each other for resources and students. They see participation in BUILD-IT as an opportunity to build capacity across multiple areas. For the short term, the focus appears to be on quality assurance, but they also articulate the desire to improve curriculum and instructional quality. Leaders also talked about their desire to develop relationships with industry partners, though respondents varied in how they articulated this. Approximately half of those interviewed discussed internship opportunities for students as one of the main goals of industry partnerships, while a smaller group spoke in terms of building relationships as a pathway to securing resources and financial support for the universities.
- **Faculty:** Faculty generally perceived the benefits of BUILD-IT in terms of the opportunity for continuous learning through the Project Spine and instructional quality training. Faculty who had participated in the Project Spine events generally saw benefits, though several discussed some challenges in applying what they learned in the classroom. Faculty who had participated in the quality assurance workshops also felt they helped them understand how to support the accreditation efforts of their universities. Contacts with industry also emerged in the majority of faculty interviews as a benefit of participation. Finally, particularly among former HEEAP universities, faculty were also very interested in working with industry partners through the Maker Spaces.
- **Quality Assurance Personnel:** As previously noted, quality assurance staff varied in their perceived benefits from the activities that relate to them. Those who have not participated in such trainings previously perceive strong benefits, while those who have perceive less benefit. Quality assurance personnel also perceive strong benefits from participation in the coaching circles as well as direct institutional support from the project to help address their university's specific challenges. Finally, they welcome the opportunity for faculty at their institutions to participate in quality assurance training as it enhances their institutions' overall accreditation efforts.

- **Students:** Students were less aware of the project as a specific undertaking, but they became interested in certain components as they learned about them. Students tended to be aware of the competitions affiliated with the program and expressed the desire for more competitions to be offered (some suggesting that prize money should be higher). Also, they were very interested in the curricular and instructional quality training offered through the project. Though these trainings did not relate directly to them, all student groups expressed a need to improve the quality of pedagogy and resources at their institutions. Participants in two of the four student group interviews noted that students in honors programs have more resources and opportunities available to them. Non-honors students expressed the desire that the benefits of the project extend to them. Finally, students were very interested in the prospect of working in the Maker Spaces as they are launched, particularly as a way of working with industry partners on real problems.
- **Industry Partners:** As previously noted, for those who recruit talent directly in Vietnam, the desire to improve the workforce readiness of graduates in STEM fields is the greatest perceived benefit of engagement in the project. Partners who do not recruit directly in Vietnam also discussed improved workforce readiness as a motivation for their involvement in the project; however, their primary perceived benefit is to expand the market for their products and services.

Finding 22: It is still too early in the implementation of the project for stakeholders to perceive that workforce readiness of graduates has improved through BUILD-IT. There also appear to be inconsistent definitions of workforce readiness that may impact how it is defined for the project.

Evidence:

In terms of perceptions of workforce readiness of graduates being improved under BUILD-IT, the general consensus from interviews with key stakeholders is that it is still too early in the implementation of the project for results in this area to be definitively identified:

- The implementing partner notes that because there are not yet graduates from the related programs since BUILD-IT started, it is difficult to make a determination regarding workforce readiness. In addition, the project struggles with how to measure workforce readiness, since the direct focus is not on student outcomes. The causal linkage in the results framework “is long to workforce readiness,” partially due to the fact that USAID does not appear to have a definition of workforce readiness. When discussed with USAID, the definition provided focused on individual efficacy.
- Three out of five faculty group interviews indicated that it was still too early in the project to make a determination on student outcomes in workforce readiness. They were uniform in citing the soft skills of students as the greatest need, particularly teamwork, communication and critical thinking/problem solving skills. They also felt that the technical skills of students were sound.
- Three out of six interviews with quality assurance personnel also suggested hesitation to identify the impact of BUILD-IT on workforce readiness of students, though they did note that the movement towards accreditation was bringing greater focus on student learning outcomes. Of the three faculty interviews referenced above, one also expressed this view, noting that the curriculum mapping process undertaken as part of the university’s accreditation efforts also highlighted a greater focus on student outcomes.
- Finally, two out of four group interviews with students revealed that students also feel the need to develop their soft skills. Younger faculty tend to provide some opportunity to do this, but

students feel that greater focus across a broader cross-section of faculty and courses is needed to achieve significant change in this area.

Respondents in three out of the four interviews with government partners welcomed the opportunities for change that BUILD-IT activities provide, but they largely felt it was too early in the implementation process to see deep impact. Following are the main insights emerging from these interviews:

- Three of the four respondents were clear that resolution of the workforce readiness issue is a much larger systemic issue than MoET and universities alone can address. This is because they tended to describe efforts in improving workforce readiness of students as working with the industry sector to create interviews and apprenticeships. Such efforts must also include other ministries and departments, including MoIT and the Department of Justice.
- Each of these three respondents admitted that getting cross-ministry collaboration is very difficult, and in fact one MoET representative remarked that because of this challenge, the entire issue of workforce readiness has effectively been tabled in the ministry.
- The respondent from MoIT noted that his ministry's connections with industry, as well as its educational institutions' more pragmatic approach to education, can be an asset to the project's efforts to contribute to change. However, he also noted that since only two MoIT educational institutions participate in the project, the contribution of MoIT to broader change is somewhat limited.

Conclusions:

- It is too early in the project to make comprehensive determinations of benefits stakeholders receive through the project, as stakeholders have not yet experienced all of the project's multiple (and sometimes interconnecting) components. All that can be determined are stakeholder *perceptions* of benefits that they will receive, based upon aspects of the project they have experienced so far. Similarly, it is too early to make assessments of workforce readiness of graduates having been improved.
- The opportunity for direct cross-partner collaboration is the main perceived benefit in BUILD-IT, and partners seek to realize such engagement during and after the project. Improved workforce readiness is at the core of partner collaboration in BUILD-IT, but the project does not have a clearly defined and achievable definition of workforce readiness that can focus multi-partner engagement in the project towards results.

ANNEX IX: EXAMPLES OF BUILD-IT ENGAGEMENT WITH THE GOVERNMENT OF VIETNAM

Question 2d: Range of Universities and Support from the Government of Vietnam

The implementing partner provided information about its work with the Government of Vietnam in addition to key partners such as the Ministry of Education and Training (MoET). Examples from this list include:

- o **Center for Education Collaboration (CEA):** BUILD-IT has signed MOUs with two CEAs and is in process to sign a third. Through these MOUs, ASU will develop and implement quality assessor training for national impact. These CEAs were created under MoET, although they have been charged to operate independently for accreditation.
- o **New Alliance to advance STEM Programs – Science, Engineering, Technology and Innovation (SETI) Alliances:** ASU and the Vietnamese Ministry of Science of Science and Technology (MOST) announced a partnership on May 31, 2017 to advance research and academic programs in SETI. The implementing partner reports that the BUILD-IT Alliance has been pivotal in connecting these partners to create a framework through which ASU, MOST, Vietnamese technical universities, research institutes and private industry can share knowledge, culture and experience.
- o **National Assembly Committee for Culture, Youth and Children:** This group met with USAID and the BUILD-IT team to develop a set of criteria for evaluating the current state of education and how it can be improved. A six-month work plan has been developed and will be discussed with the committee in an upcoming meeting.
- o **MoET-STEM Education Workshop:** The MoET Secondary Education Department asked the ASU-BUILD-IT team to discuss activities, future plans and collaboration opportunities during a two-hour workshop.
- o **MoET Accreditation Collaborations:** ASU is continuing its collaboration efforts with MoET. Following its May meeting, the Activity 4 team is reviewing MoET's action plan on accreditation from 2017–2020 for the entire system.
- o **MoET Solutions to Enhance Higher Education Quality Conference:** The MoET minister asked the BUILD-IT team to develop a brief he presented to 300 rectors at a forum in Da Nang in January 2017.

ANNEX X: ILLUSTRATIVE QUESTIONS TO SUPPORT PROJECT LEARNING

Recommendation 11: Complement M&E reporting with CLA approaches

One simple approach that any individual can leverage to build CLA principles into her/his work is the use of challenge questioning in relationships with others in the network of stakeholders. Such questioning enables individuals to harvest the insights and knowledge that helps make projects and activities more effective. Collaboration-based challenge questions invite local partners or others with critical knowledge to be honest in their feedback and assessment of real issues. Overall, such questions can help focus implementing partners as they try to leverage the insights and perspective of stakeholders in the top, middle, bottom or periphery of the BUILD-IT system. The table in Annex X details some examples of challenge questions and the types of learning opportunities they stimulate.

GENERAL CHALLENGE QUESTIONS THAT SUPPORT PROJECT LEARNING¹⁷

Learning Opportunity	Critical Question
Reflect beyond data analysis	<i>What do we think is really going on here?</i>
Encourage feedback	<i>How are we doing?</i>
Explore contradictions	<i>How else can we think about this?</i>
Invite critique	<i>What do you really think?</i>
Encourage diversity of views	<i>Who else should we speak to?</i>
Adapt more effectively to the local environment	<i>What more localized approaches might we consider?</i>
Enhance learning by tightening (or loosening) local networks	<i>How can we arrange our teams to encourage greater collaboration and knowledge sharing?</i>

This illustrative list of questions may seem obvious, but regular use of challenge questions can help build the trust needed for extending information pipelines deep into the local systems where the project operates.

The second table, below, contains some additional BUILD-IT specific learning questions that can form the basis of a Learning Agenda to guide Mission oversight of the project from a CLA perspective on an ongoing basis. To be effective, the questions should not be considered or answered conceptually, but rather empirically over time based upon emerging evidence and insights from project stakeholders.

BUILD-IT SPECIFIC LEARNING QUESTIONS

Question	Type
In what specific ways are BUILD-IT efforts at universities strengthening the capacity for high-impact STEM programs and learning outcomes that develop student workforce ready skills to improve Vietnam's social and economic viability?	Theory of Change

¹⁷ Adapted from Olson, E. and Eoyang, G. (2001). *Facilitating Organization Change: Lessons from Complexity Science*. San Francisco: Jossey-Bass/Pfeiffer.

In what specific ways are BUILD-IT university-private sector collaborations improving Vietnam's social and economic viability?	Theory of Change
In what specific ways are BUILD-IT'S efforts to strengthen higher education and program innovation policies improving Vietnam's social and economic viability?	Theory of Change
What are the barriers to universities leveraging BUILD-IT resources to develop institutional capacity for high-level autonomous policy development?	Technical Evidence
What are the barriers to BUILD-IT improving curricular and instructional quality that strengthens university capacity for high-impact STEM programs and learning outcomes?	Technical Evidence
How can BUILD-IT best structure the project to motivate university leaders to steward change towards high-impact, high-quality STEM learning programs at their respective universities?	Technical Evidence
What are the barriers to faculty developing and applying the project-based approaches in their curricula and teaching?	Technical Evidence
What are the barriers to students developing the workforce readiness skills through BUILD-IT?	Technical Evidence
How can the project best support students to ensure they develop and leverage the skills that will contribute to Vietnam's social and economic viability?	Technical Evidence
What are the barriers to universities recruiting and promoting females for non-traditional STEM career paths in Vietnam?	Technical Evidence
What, if any, unanticipated "game changers" taking place during the project could have an impact on BUILD-IT outcomes, either positively or negatively?	Scenario Planning
What, if any, unanticipated situations can affect the ability of universities to operate autonomously in Vietnam?	Scenario Planning
How may the implementing partners other initiatives in Vietnam (if any) affect (positively or negatively) the attainment of BUILD-IT objectives?	Scenario Planning

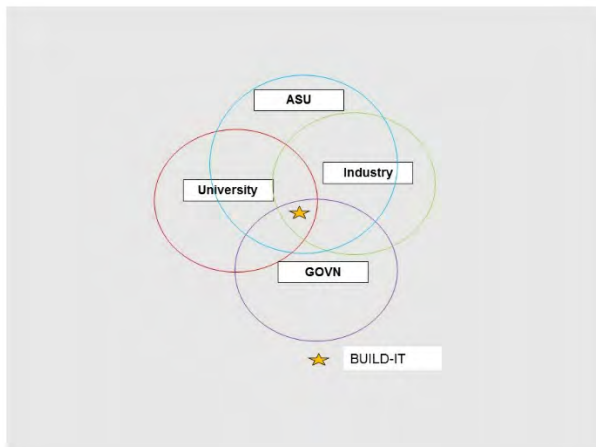
These questions provide a starting point for a more comprehensive CLA plan that can guide Mission efforts across all its programs and projects. The development of such a plan should be pursued Mission-wide so that learning and adaptive management are pursued in an integrated and strategic manner.

ANNEX XI: INNOVATION ECOSYSTEM AS IT RELATES TO BUILD-IT

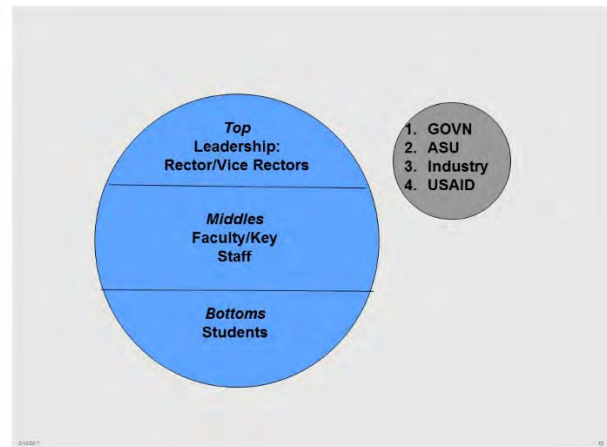
As discussed in the Recommendations section of the evaluation, to build a dynamic innovation ecosystem, stakeholders should recognize that BUILD-IT operates in more than one system at any time. At a macro level, the project engages academic, industry and government partners collectively. At a micro level, each university is a sub-system of stakeholders, each with its own distinctive strengths and challenges. This micro-level distinction is important given evidence that suggests academic and industry partners seek opportunities for direct collaborative engagement.

INNOVATION ECOSYSTEM

BUILD-IT Innovation Ecosystem



Tops-Middles-Bottoms of University System



As the image of the BUILD-IT innovation ecosystem on the left indicates, systems are systems, within systems, within systems. The image on the right above is a simplified view since it gives a snapshot of a sub-system of the larger system at a given point in time (in this case, a partner university). In reality, systems are actually much more complex and dynamic. This means that any one stakeholder is constantly moving in and out of top, middle, bottom or validator conditions. A rector may be at the top of her/his university system, but may be in the middle of the larger Vietnam higher education system. Similarly, MoET may stand as a validator of the BUILD-IT project system, but at critical moments (particularly in relation to defining university autonomy) it needs to sit at the top of the system (or in the middle if it is engaging with lawmakers around national-level policy). Stakeholders' understanding of where they sit in a system for a particular objective shapes the nature of the exchange of that stakeholder with other parts of the system. The behaviors exhibited by stakeholders in any system component can optimize system performance, though often enacted behaviors do not optimize performance.

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