

TERMS OF REFERENCE

Title of this consultancy: Strategic Planning and Advisory Services for UWI Tech-Transfer Team

Financed by Technical Cooperation: TT-T1138 – Driving Economic Dynamism through Tech Transfer in Trinidad and Tobago

1. Background and Justification

- 2.1 Globally, universities are playing an increasing role in innovation, as companies choose to license research from universities rather than carrying out their own¹. A sophisticated entrepreneurship and innovation eco-system requires mechanisms to encourage knowledge generation and diffusion. Trinidad and Tobago scores very low (104th out of 132 countries) in terms of Innovation linkages, specifically university-industry R&D collaboration (107th), although its QS University ranking is decent (72nd out of 132 countries), many new businesses are created relative to the population (32nd), it has a relatively high proportion of high tech exports as a % of total trade (62nd), a high proportion of PCT patents (74th), and a relatively high degree of production and export complexity (51st in the world)².
- 2.2 The UWI St. Augustine campus in Trinidad and Tobago has a trajectory of research and development (R&D) in engineering; and has also produced innovations in the social sciences, natural sciences, and agriculture. This research, development and innovation activity (R&D&I) has resulted in valuable intellectual property (IP) (both protected and as trade secrets) that UWI has not yet commercialized. Some examples of research produced by the university with potentially high demand uses by industry are: 1) Carbon capture storage at Point Lisas³; 2) Microbial breakdown to treat oil spills/contamination; and 3) Antibiotic Adjuvants⁴.
- 2.3 The UWI St. Augustine campus has strengthened its intellectual property (IP) policy, which is awaiting approval by the university governing bodies. The UWI also has Standard Operating Procedures (SOP) for commercialization of university generated IP. Both the IP policy and the SOP have benefitted from technical assistance from the World Intellectual Property Organization (WIPO). As part of these strengthening efforts, the WIPO has provided UWI with training on IP, and UWI now has 5 WIPO certified IP assessors, whose skills will become invaluable in the IP agreements that this TC is hoping to foster

¹ Global Innovation Index 2022: What is the future of innovation-driven growth? World Intellectual Property Organization.

² Ibid.

³ Point Lisas is Trinidad and Tobago's industrial park, which has high carbon emissions related to ammonia and other high carbon content intensive processes. The existence of this complex makes Trinidad and Tobago rank second in the world in per capita production for carbon emissions. UWI is working on how to capture this carbon and sequester it in end-of-life, on-shore wells.

⁴ These antibiotic adjuvants would help patients use regular antibiotics and bypass the defenses of antibiotic-resistant bacteria. It has been genetically engineered by UWI, and could potentially be a billion-dollar pharmaceutical product.

between the university, researchers and the private sector⁵. One aspect of this IP support was the recently launched “Appropriate Technology Competition” – a partnership between WIPO, the Korean Intellectual Property Office (KIPO), UWI and the Government of Trinidad and Tobago Intellectual Property Office. Through this competition, applicants had to use patent information to identify potential applications of IP in the Trinidad and Tobago context. This WIPO support has enhanced management of IP and raised awareness of the importance of IP and opportunities for commercialization, upon which this project will build on.

- 2.4 UWI has established a St. Augustine Center for Entrepreneurship and Innovation (STACIE)⁶ to promote innovation, fund research, and foster entrepreneurship. STACIE is keen on expanding the generation of commercially valuable research, development and innovation (R&D&I) outputs and strengthening the links between UWI and the Trinidad and Tobago private sector through licensing and knowledge transfer. STACIE manages the UWI’s Research and Development Impact (RDI) Fund, the Innovation and Technology Transfer (ITT) Fund, the Intellectual Property Help Desk, and works with other university offices, like the University Office of Research and the University Office of Global Partnerships and Sustainable Futures to find and access opportunities for external funding to support the work of UWI researchers.
- 2.5 The UWI St. Augustine campus has also established a venture capital (VC) company (UWI Ventures Limited, or UVL) to scale-up university spinoffs or other knowledge-based entrepreneurship ventures in Trinidad and Tobago, for which it is seeking strong private sector partnership. The existence of this venture capital company in Trinidad and Tobago is an exciting development for the entrepreneurship and innovation ecosystem, as no other VC fund currently exists in the English-speaking Caribbean countries, severely limiting the capability of private sector driven, innovative projects to scale⁷. UVL has started engaging with some Trinidad and Tobago funds and local companies to raise investment.
- 2.6 The expected outcome of the project is increased tech transfer capabilities by the UWI St. Augustine. Measurement of this outcome is related to the number of private sector companies engaged in tech transfer activities with the UWI, the number of solutions being considered by the private sector for tech-transfer, and the number of university staff participating in tech transfer activities.
- 2.7 In its efforts to identify tech transfer opportunities aligned to its engineering and life science capabilities, STACIE has approached the Center for Excellence for the Caribbean energy transition and identified a preliminary list of technology development initiatives, each of them backed by private sector companies: developing the hydrogen economy, waste to energy/bioenergy/biomethanol, data analytics/optimization/data science for the energy sector, integrating renewables into the regional energy ecosystem, low carbon transportation, carbon credits and carbon markets. UWI STACIE wants to position itself to develop and broker solutions for these initiatives, without excluding the possibility of working on other sectors that may be identified during implementation of this project. UWI STACIE has also met with

⁵ UWI St. Augustine already diffuses knowledge for public sector work, as evidenced by the genome sequencing capabilities that the university developed during COVID-19, [becoming the only entity in CARICOM able to do genome sequencing, and providing this service to 16 Caribbean countries](#) during the pandemic.

⁶ [St Augustine Centre for Innovation and Entrepreneurship | St. Augustine Centre for Innovation and Entrepreneurship \(uwi.edu\)](#)

⁷ Another VC fund is being established by the Development Bank of Jamaica, with support from the IDB operation “Boosting Innovation, Growth and Entrepreneurship Ecosystems in Jamaica”.

[ConnectBogota](#) to learn from their experience developing tech transfer opportunities in the life sciences industry and is interested in following their tech transfer model⁸.

- 2.1 **Team's Mission:** Established in 1959, the Inter-American Development Bank ("IDB" or "Bank") is the main source of financing for economic, social and institutional development in Latin America and the Caribbean. It provides loans, grants, guarantees, policy advice and technical assistance to the public and private sectors of its borrowing countries.
- 2.2 The general objective of the Technical Cooperation (TC) project that finances this consultancy is to support the strengthen the capacity of the University of the West Indies (UWI) St. Augustine, to stimulate tech transfer from the university to the private sector in a way that dynamizes the economy of Trinidad and Tobago. The specific objective is to support the UWI to produce and broker research, development and innovation outputs that are utilized and scaled up by private counterparts.

2. Objective

2.1. The objective of this consultancy is to provide advice to the Tech-transfer team at the UWI St. Augustine Center for Innovation and Entrepreneurship, and other associated UWI entities, on how to identify tech transfer opportunities, source adequate solutions, and match tech-transfer demand to adequate potential solutions. Another objective of the consultancy is to develop a business model for the UWI tech transfer team that can sustain these operations once the technical assistance activities of this pilot project have finalized.

3. Scope of Consultancy

- 3.1. Specifically, the consultancy will provide advice and support to the UWI tech team to complete the following activities, using an open innovation model:
 - Develop and carry out a process to identify and codify technology problems/needs highly sought by the Trinidad and Tobago private sector;
 - Develop and carry out a process to scout potential technology solutions for these problems
 - Develop and carry out a process to match the demand for technology problems/needs to the potential technology solutions for these needs;
 - Develop and carry out a process to create spaces (meeting points, events) where technology problem owners and potential solutions suppliers can meet, where they can develop clear arrangements for working together (clarifying both IP ownership rights and business structure), and where demanders of technology solutions choose and enter into a formalized workplan along with their preferred suppliers;
 - Develop and carry out a process to determine if the potential technology solutions require additional support for development, and if so, advise the UWI tech team on what additional support (if any) to provide.
 - It is not expected that the consultant will carry out these processes by itself, rather, that it will guide the UWI tech transfer team in how to carry out these processes, or will carry out

⁸ CO-T1475

these processes in tandem with the UWI tech transfer team. This may entail training of the team, accompanying the team on meetings with the different counterparts, reviewing materials for dissemination, and other relevant tasks that will ensure that the UWI tech team learns from the process and can execute them by itself the second time around.

- 3.2. The consultancy will codify the processes developed in 3.1 and the lessons learned during their application into a written **Tech Transfer Strategy** that will guide future UWI tech transfer activities.
- 3.3. The consultancy will produce, based on the lessons learned from the activities encompassed in 3.1, a **Business Model for UWI Tech Transfer Activities** which will accompany the tech transfer strategy.
- 3.4. The consultancy will also produce recommendations for the design of an Information System to manage the UWI tech transfer process (including codification of potential tech transfer problems, and interface with calls for problems/calls for solutions), and assist the UWI tech transfer team in supervising the development of this system.
- 3.5. Two separate consultancies, also financed under this project, will:
 - Provide Intellectual Property Advisory Services to both problem owner and solution provider, with the objective of creating trust, fostering open innovation, and increasing the chances of reaching a successful IP arrangement or other business contract between both parties at the end of the project.
 - Finance a tracking information system to codify the information of problem owners, critical problems to be addressed, solutions providers, potential matches, and outcome results.

4. Key Activities

- 4.1. **Inception Meeting with Stakeholders and Desk Review:**
 - The consultant(s) will participate in a preliminary meeting with the UWI tech transfer team and IDB project team members to discuss the project's objectives and the consultancy's objectives, the open innovation approach expected of the consultancy, expected outputs and outcomes of the consultancy, the time that the consultant will spend in Trinidad and Tobago supporting the UWI tech transfer team, and any other issues related to the execution of the consultancy.
- 4.2. **Identification of potential tech-transfer opportunities**
 - The consultant will work with the UWI tech-transfer team on a methodology to identify potential technology problems of the Trinidad and Tobago private sector that require innovative, customized solutions (that is, not off the shelf), and for which the private sector is open to engage with the UWI as a technology broker. The consultant is expected to train the UWI tech-team on outreach and messaging to the private sector to identify such problems, including accompanying the UWI tech team to meetings with the private sector. A call for technology problems widely disseminated to the private sector is suggested (although not mandatory) to quickly elicit an inventory of potential tech-transfer opportunities.

- The consultant will work with the UWI tech transfer team to identify a list of 7-10 technology problems with the greatest potential for tech transfer, to gather a “willingness to participate” confirmation from these technology owners, as well as information on any IP already inherent to that company that could be affected or enhanced by the solution, and to codify the identified problems into specific “terms of reference” that can be easily understood by potential solutions providers.

4.3. Identification of potential solutions providers

- The consultant will work with the UWI tech-transfer team on a methodology to identify potential solutions providers for the 7-10 codified and prioritized technology problems identified in 4.2. The consultant is expected to train the UWI tech-team on outreach and messaging to potential solutions providers, both domestic and foreign, as well as how to interface with domestic and foreign teams when the possibility of a joint venture arises. A call for solutions providers widely disseminated is suggested (although not mandatory) to quickly elicit an inventory of potential solutions providers.
- The consultant will work with the UWI tech transfer team to evaluate potential solutions providers and identify at least a couple of solid potential providers for each of the 7-10 technology problems prioritized.

4.4. Matchmaking and setting the context for tech transfer

- The consultant will work with the UWI tech transfer team to organize meetings/events where the problem owners are introduced to the potential solutions providers for selection.
- The consultant will support the conversation between the problem owners and the potential solutions providers such that, once a problem owner chooses a solution provider, a formal workplan to develop the solution is agreed to by both parties, which includes: a) workplan: objectives, activities, deliverables, timelines, responsibilities, financing of R&D and other development work, legal commitments (if any), among others; b) declared intellectual property by both sides: i) moral rights property; ii) Author’s rights property; iii) Intellectual Property rights; c) Distribution of intellectual property rights; d) financial contributions: i) prior to the process of validation/R&D; ii) during the process of validation/R&D; e) mechanisms to protect intellectual property rights during the engagement; f) custody and care of the technological products, prototypes and other intellectual products generated by working together; g) confidentiality and publications; h) declaration of consent for the use of intellectual property rights; i) rules to modify the agreement; j) resolution of conflicts; k) other issues that the parties may find relevant and pertinent.
- The consultant will support the UWI team in deciding whether and which kind of additional support (including Intellectual Property advisory services) to provide to the solutions provider (or to both parties) to increase the probability that it results in a favorable business arrangement for both parties.
- The consultant will support the UWI tech team and both parties that sign each of the aforementioned agreements, during the R&D and validation phase, to provide advice on the process of tech transfer, and provide advice and solutions to any conflicts that may arise.

4.5. Design and supervise the creation of a tracking information system

- The consultant will work with the UWI tech transfer team to design a Tracking Information System that can help the UWI tech transfer team capture problem identification, identification of possible solutions, potential matches, and outcome results. Although the programming of the information system itself is not included in this consultancy, the consultants are expected to help supervise the development of the Information System so that it is able to, long term, support implementation of the Tech Transfer Strategy and Business Model.

4.6. Tech Transfer Strategy and Business Model

- The consultant will write a Tech Transfer Strategy incorporating lessons learned from the pilot project to guide UWI in its long-term tech transfer process.
- The Tech Transfer Strategy will have an accompanying business model, which will identify potential revenue streams (including pricing, volume, marketing mechanisms) to financially sustain tech transfer activities by UWI. The consultant may need to conduct surveys or other methods of collecting data to complete the business model.

5. Expected Outcome and Deliverables

5.1. Reports: The consultant will produce the following reports to document the progress of the consultancy:

- 1) detailed workplan of activities describing methodology for problem identification, identification of solutions, matchmaking, and timeline;
- 2) description of activities carried out during problem identification, and lessons learned;
- 3) description of activities carried out during identification of solutions, and lessons learned;
- 4) description of activities carried out during matchmaking, and lessons learned, including the workplans signed by problem owner and solutions provider
- 5) design of a Tracking Information System for tech transfer;
- 6) Tech Transfer Strategy for UWI St. Augustine;
- 7) Tech Transfer Business Model for UWI St. Augustine.

6. Project Schedule and Milestones

6.1. The project is expected to begin in September 2023 and to be completed by mid 2025. The schedule will be defined by the firm in agreement with the UWI tech transfer and IDB project teams. The consultant is expected to spend sufficient time in Trinidad and Tobago to help UWI accomplish: 1) problem identification; 2) solution identification; 3) problem and solution matching; 4) supervision of the Tracking Information System.

7. Reporting Requirements

7.1. Every report must be submitted via an electronic file for review.

7.2. All deliverables must be in English.

8. Acceptance Criteria

8.1. All deliverables will be reviewed by the IDB and UWI project teams. Comments will be provided by written email. The consultant/firm is expected to provide written feedback on how comments were addressed. Payments will be made upon final reports (that is, reports that were reviewed and commented by the IDB and UWI project teams, and that the consultants have addressed to both project teams' satisfaction).

9. Supervision and Reporting

9.1. The consultancy will be formally reporting to Sylvia Eva Dohnert de Lascurain, Private Sector Lead Specialist, Inter-American Development Bank.

9.2. The Consultancy will be expected to work closely with the University of the West Indies' St. Augustine Center for Entrepreneurship and Innovation.

10. Schedule of Payments

10.1. Payment terms will be based on project milestones or deliverables. The Bank does not expect to make advance payments under consulting contracts unless a significant amount of travel is required. The Bank wishes to receive the most competitive cost proposal for the services described herein.

10.2. The IDB Official Exchange Rate indicated in the RFP will be applied for necessary conversions of local currency payments.

Payment Schedule	
<i>Deliverable</i>	%
1. Deliverable 1: Detailed workplan and timeline	5%
2. Deliverable 2: Description of activities carried out during problem identification, and lessons learned	10%
3. Deliverable 3: Description of activities carried out during identification of solutions, and lessons learned	10%
4. Deliverable 4: Description of activities carried out during matchmaking, and lessons learned, including workplans signed by problem owners and solutions providers	30%
5. Deliverable 5: Design of a Tracking Information System for Tech Transfer	10%
6. Deliverable 6: Tech Transfer Strategy for UWI St. Augustine	20%
7. Deliverable 7: Tech Transfer Business Model for UWI St. Augustine	15%
TOTAL	100%

11. Qualifications to Utilize in Criteria for Selection:

11.1. Qualifications of Team Members:

- This consultancy requires the services of a consultant/consulting firm with experience in technology transfer activities, intellectual property licenses, technology scouting, and patenting.
- The Lead Consultant should possess a master's degree in international development, Business, Innovation, Law, Social Entrepreneurship or a related field. At least 5 years' experience in technology development related fields and intellectual property arrangements is sought.
- Fluency in oral and written English.

Core and Technical Competencies:

- Familiarity with best practices in the design of open innovation processes related to technology transfer activities
- Highly developed communication and writing skills as evidenced by presentations and publicly available reports, blogs, articles, and/or academic pieces.
- Strong inter-personal relations skills. Pro-active in seeking information, managing relationships with stakeholders, including building trust and promoting partnership.
- Ability to manage client expectations, negotiate around project execution challenges, and identify possible solutions.
- A working understanding of guidelines and procedures typically used by development banks.
- The ability to work independently and manage multiple tasks effectively. Excellent written and oral communication skills are required, including the ability to synthesize key issues and draw lessons learned.

TERMS OF REFERENCE

Title of this consultancy: Intellectual Property Ownership Advisory Services

**Financed by Technical Cooperation: TT-T1138 – Driving Economic Dynamism
through Tech Transfer in Trinidad and Tobago**

1. Background and Justification

- 2.1 Globally, universities are playing an increasing role in innovation, as companies choose to license research from universities rather than carrying out their own¹. A sophisticated entrepreneurship and innovation eco-system requires mechanisms to encourage knowledge generation and diffusion. Trinidad and Tobago scores very low (104th out of 132 countries) in terms of Innovation linkages, specifically university-industry R&D collaboration (107th), although its QS University ranking is decent (72nd out of 132 countries), many new businesses are created relative to the population (32nd), it has a relatively high proportion of high tech exports as a % of total trade (62nd), a high proportion of PCT patents (74th), and a relatively high degree of production and export complexity (51st in the world)².
- 2.2 The UWI St. Augustine campus in Trinidad and Tobago has a trajectory of research and development (R&D) in engineering; and has also produced innovations in the social sciences, natural sciences, and agriculture. This research, development and innovation activity (R&D&I) has resulted in valuable intellectual property (IP) (both protected and as trade secrets) that UWI has not yet commercialized. Some examples of research produced by the university with potentially high demand uses by industry are: 1) Carbon capture storage at Point Lisas³; 2) Microbial breakdown to treat oil spills/contamination; and 3) Antibiotic Adjuvants⁴.
- 2.3 The UWI St. Augustine campus has strengthened its intellectual property (IP) policy, which is awaiting approval by the university governing bodies. The UWI also has Standard Operating Procedures (SOP) for commercialization of university generated IP. Both the IP policy and the SOP have benefitted from technical assistance from the World Intellectual Property Organization (WIPO). As part of these strengthening efforts, the WIPO has provided UWI with training on IP, and UWI now has 5 WIPO certified IP assessors, whose skills will become invaluable in the IP agreements that this TC is hoping to foster

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between the university, researchers and the private sector⁵. One aspect of this IP support was the recently launched “Appropriate Technology Competition” – a partnership between WIPO, the Korean Intellectual Property Office (KIPO), UWI and the Government of Trinidad and Tobago Intellectual Property Office. Through this competition, applicants had to use patent information to identify potential applications of IP in the Trinidad and Tobago context. This WIPO support has enhanced management of IP and raised awareness of the importance of IP and opportunities for commercialization, upon which this project will build on.

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[ConnectBogota](#) to learn from their experience developing tech transfer opportunities in the life sciences industry and is interested in following their tech transfer model⁸.

- 2.1 **Team's Mission:** Established in 1959, the Inter-American Development Bank ("IDB" or "Bank") is the main source of financing for economic, social and institutional development in Latin America and the Caribbean. It provides loans, grants, guarantees, policy advice and technical assistance to the public and private sectors of its borrowing countries.
- 2.2 The general objective of the Technical Cooperation (TC) project that finances this consultancy is to strengthen the capacity of the University of the West Indies (UWI) St. Augustine, to stimulate tech transfer from the university to the private sector in a way that dynamizes the economy of Trinidad and Tobago. The specific objective is to support the UWI to produce and broker research, development and innovation outputs that are utilized and scaled up by private counterparts.

2. Objective

2.1. The objective of this consultancy is to provide advisory services to private sector parties involved in tech transfer activities supported by the UWI St. Augustine Center for Innovation and Entrepreneurship (the problem owner on the one hand, and the solutions provider on the other), to increase the probability of a successful Intellectual Property arrangement between both parties. These advisory services stem from the recognition that tech transfer is a messy process where both problem owner and solutions provider may be intricately involved in the development of a new, innovative solution – therefore providing both parties with certain claims to property rights.

3. Scope of Consultancy

- 3.1. The consultancy will provide advice and support to the private sector parties involved in potential tech transfer negotiations, as well as to the UWI tech transfer team, as needed, to increase trust within the parties and help iron out any conflicts regarding intellectual property rights. In the process of providing advice, the consultant is expected to actively participate in the following milestones:
 - Codification of technology problems by the UWI tech transfer team, to identify which aspects of finding a solution to the technology problem may possibly require co-generation with the problem owner;
 - Evaluation of potential solutions' providers to a specific problem, to identify which aspects of the proposed solution have clearly established intellectual property rights that are the property of the solutions provider (even if the final solution requires co-development)
 - Matchmaking events between problem owners and solutions' providers, to identify any potential intellectual property rights conflicts that may arise, and proactively work to clarify rights and propose solutions.
 - Accompanying ongoing meetings between problem owners and solutions' providers, to help clarify intellectual property issues and propose solutions that can enhance the probability of a successful business arrangement between the parties.

⁸ CO-T1475

3.2. Two separate consultancies, also financed under this project, will:

- Provide Tech Transfer Advisory Services to the UWI tech transfer team, so that it is able to identify potential tech transfer opportunities (and its problem owners), potential solutions providers, and broker matches.
- Finance a tracking information system to codify the information of problem owners, critical problems to be addressed, solutions providers, potential matches, and outcome results.

4. Key Activities

4.1. Inception Meeting with Stakeholders and Desk Review:

- The consultant(s) will participate in a preliminary meeting with the UWI tech transfer team and IDB project team members to discuss the project's objectives and the consultancy's objectives, the open innovation approach expected of the consultancy, expected outputs and outcomes of the consultancy, the time that the consultant will spend in Trinidad and Tobago supporting the UWI tech transfer team, and any other issues related to the execution of the consultancy.

4.2. Identification of potential Intellectual Property (IP) conflicts, and provision of solutions

- The consultant will review the declared intellectual property rights of problem owners (prior to the R&D/validation phase), the workplans entered into by problem owners and solutions providers, to identify sources of potential IP conflicts between both parties. The consultant will describe these IP conflicts to the UWI tech transfer team and suggest potential solutions/way forward.

4.3. Handholding problem owners and solutions providers

- The consultant will participate in meetings with problem owners and solutions providers, and with the UWI tech transfer team, as needed, to help solve any Intellectual Property issues that may arise. The consultant shall recommend to both parties how to handle IP issues, including IP arrangements between the parties to recognize ownership and provide revenue related to IP (for example, licensing agreements).

5. Expected Outcome and Deliverables

5.1. Reports: The consultant will produce the following reports to document the progress of the consultancy:

- 1) Detailed workplan of activities describing methodology for IP conflict identification, solutions proposals, and working with conflicting parties;
- 2) Report describing specific IP conflicts identified, and potential solutions
- 3) Report describing outcomes of IP negotiations, upon finalization of the consultancy, including successful IP and business arrangements on the use of IP.

6. Project Schedule and Milestones

- 6.1. The project is expected to begin in January 2023 and to be completed by mid 2025. The schedule will be defined by the firm in agreement with the UWI tech transfer and IDB project teams.

7. Reporting Requirements

- 7.1. Every report must be submitted via an electronic file for review.
 7.2. All deliverables must be in English.

8. Acceptance Criteria

- 8.1. All deliverables will be reviewed by the IDB and UWI project teams. Comments will be provided by written email. The consultant/firm is expected to provide written feedback on how comments were addressed. Payments will be made upon final reports (that is, reports that were reviewed and commented by the IDB and UWI project teams, and that the consultants have addressed to both project teams' satisfaction).

9. Supervision and Reporting

- 9.1. The consultancy will be formally reporting to Sylvia Eva Dohnert de Lascurain, Private Sector Lead Specialist, Inter-American Development Bank.
 9.2. The Consultancy will be expected to work closely with the University of the West Indies' St. Augustine Center for Entrepreneurship and Innovation.

10. Schedule of Payments

- 10.1. Payment terms will be based on project milestones or deliverables. The Bank does not expect to make advance payments under consulting contracts unless a significant amount of travel is required. The Bank wishes to receive the most competitive cost proposal for the services described herein.
 10.2. The IDB Official Exchange Rate indicated in the RFP will be applied for necessary conversions of local currency payments.

Payment Schedule	
<i>Deliverable</i>	%
1. Deliverable 1: Detailed workplan and timeline	10%
2. Deliverable 2: Report describing specific IP conflicts identified, and potential solutions	25%
3. Deliverable 3: Report describing outcomes of IP negotiations	65%
TOTAL	100%

11. Qualifications to Utilize in Criteria for Selection:

11.1. Qualifications of Team Members:

- This consultancy requires the services of a consultant/consulting firm with experience in technology transfer activities, intellectual property licenses, technology scouting, intellectual property rights protection, business negotiations, and patenting.
- The Lead Consultant should possess a master's degree in international development, Business, Innovation, Law, Social Entrepreneurship or a related field. At least 5 years' experience in technology development related fields and intellectual property arrangements is sought.
- Fluency in oral and written English.

Core and Technical Competencies:

- Familiarity with best practices in the design of open innovation processes related to technology transfer activities.
- Highly developed communication and writing skills as evidenced by presentations and publicly available reports, blogs, articles, and/or academic pieces.
- Strong inter-personal relations skills. Pro-active in seeking information, managing relationships with stakeholders, including building trust and promoting partnership.
- Ability to manage client expectations, negotiate around project execution challenges, and identify possible solutions.
- A working understanding of guidelines and procedures typically used by development banks.
- The ability to work independently and manage multiple tasks effectively. Excellent written and oral communication skills are required, including the ability to synthesize key issues and draw lessons learned.

TERMS OF REFERENCE

Title of this consultancy: End of Project Evaluation

**Financed by Technical Cooperation: TT-T1138 – Driving Economic Dynamism
through Tech Transfer in Trinidad and Tobago**

1. Background and Justification

- 2.1 Globally, universities are playing an increasing role in innovation, as companies choose to license research from universities rather than carrying out their own¹. A sophisticated entrepreneurship and innovation eco-system requires mechanisms to encourage knowledge generation and diffusion. Trinidad and Tobago scores very low (104th out of 132 countries) in terms of Innovation linkages, specifically university-industry R&D collaboration (107th), although its QS University ranking is decent (72nd out of 132 countries), many new businesses are created relative to the population (32nd), it has a relatively high proportion of high tech exports as a % of total trade (62nd), a high proportion of PCT patents (74th), and a relatively high degree of production and export complexity (51st in the world)².
- 2.2 The UWI St. Augustine campus in Trinidad and Tobago has a trajectory of research and development (R&D) in engineering; and has also produced innovations in the social sciences, natural sciences, and agriculture. This research, development and innovation activity (R&D&I) has resulted in valuable intellectual property (IP) (both protected and as trade secrets) that UWI has not yet commercialized. Some examples of research produced by the university with potentially high demand uses by industry are: 1) Carbon capture storage at Point Lisas³; 2) Microbial breakdown to treat oil spills/contamination; and 3) Antibiotic Adjuvants⁴.
- 2.3 The UWI St. Augustine campus has strengthened its intellectual property (IP) policy, which is awaiting approval by the university governing bodies. The UWI also has Standard Operating Procedures (SOP) for commercialization of university generated IP. Both the IP policy and the SOP have benefitted from technical assistance from the World Intellectual Property Organization (WIPO). As part of these strengthening efforts, the WIPO has provided UWI with training on IP, and UWI now has 5 WIPO certified IP assessors, whose skills will become invaluable in the IP agreements that this TC is hoping to foster

¹ Global Innovation Index 2022: What is the future of innovation-driven growth? World Intellectual Property Organization.

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³ Point Lisas is Trinidad and Tobago's industrial park, which has high carbon emissions related to ammonia and other high carbon content intensive processes. The existence of this complex makes Trinidad and Tobago rank second in the world in per capita production for carbon emissions. UWI is working on how to capture this carbon and sequester it in end-of-life, on-shore wells.

⁴ These antibiotic adjuvants would help patients use regular antibiotics and bypass the defenses of antibiotic-resistant bacteria. It has been genetically engineered by UWI, and could potentially be a billion-dollar pharmaceutical product.

between the university, researchers and the private sector⁵. One aspect of this IP support was the recently launched “Appropriate Technology Competition” – a partnership between WIPO, the Korean Intellectual Property Office (KIPO), UWI and the Government of Trinidad and Tobago Intellectual Property Office. Through this competition, applicants had to use patent information to identify potential applications of IP in the Trinidad and Tobago context. This WIPO support has enhanced management of IP and raised awareness of the importance of IP and opportunities for commercialization, upon which this project will build on.

- 2.4 UWI has established a St. Augustine Center for Entrepreneurship and Innovation (STACIE)⁶ to promote innovation, fund research, and foster entrepreneurship. STACIE is keen on expanding the generation of commercially valuable research, development and innovation (R&D&I) outputs and strengthening the links between UWI and the Trinidad and Tobago private sector through licensing and knowledge transfer. STACIE manages the UWI’s Research and Development Impact (RDI) Fund, the Innovation and Technology Transfer (ITT) Fund, the Intellectual Property Help Desk, and works with other university offices, like the University Office of Research and the University Office of Global Partnerships and Sustainable Futures to find and access opportunities for external funding to support the work of UWI researchers.
- 2.5 The UWI St. Augustine campus has also established a venture capital (VC) company (UWI Ventures Limited, or UVL) to scale-up university spinoffs or other knowledge-based entrepreneurship ventures in Trinidad and Tobago, for which it is seeking strong private sector partnership. The existence of this venture capital company in Trinidad and Tobago is an exciting development for the entrepreneurship and innovation ecosystem, as no other VC fund currently exists in the English-speaking Caribbean countries, severely limiting the capability of private sector driven, innovative projects to scale⁷. UVL has started engaging with some Trinidad and Tobago funds and local companies to raise investment.
- 2.6 The expected outcome of the project is increased tech transfer capabilities by the UWI St. Augustine. Measurement of this outcome is related to the number of private sector companies engaged in tech transfer activities with the UWI, the number of solutions being considered by the private sector for tech-transfer, and the number of university staff participating in tech transfer activities.
- 2.7 In its efforts to identify tech transfer opportunities aligned to its engineering and life science capabilities, STACIE has approached the Center for Excellence for the Caribbean energy transition and identified a preliminary list of technology development initiatives, each of them backed by private sector companies: developing the hydrogen economy, waste to energy/bioenergy/biomethanol, data analytics/optimization/data science for the energy sector, integrating renewables into the regional energy ecosystem, low carbon transportation, carbon credits and carbon markets. UWI STACIE wants to position itself to develop and broker solutions for these initiatives, without excluding the possibility of working on other sectors that may be identified during implementation of this project. UWI STACIE has also met with

⁵ UWI St. Augustine already diffuses knowledge for public sector work, as evidenced by the genome sequencing capabilities that the university developed during COVID-19, [becoming the only entity in CARICOM able to do genome sequencing, and providing this service to 16 Caribbean countries](#) during the pandemic.

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⁷ Another VC fund is being established by the Development Bank of Jamaica, with support from the IDB operation “Boosting Innovation, Growth and Entrepreneurship Ecosystems in Jamaica”.

[ConnectBogota](#) to learn from their experience developing tech transfer opportunities in the life sciences industry and is interested in following their tech transfer model⁸.

- 2.1 **Team's Mission:** Established in 1959, the Inter-American Development Bank ("IDB" or "Bank") is the main source of financing for economic, social and institutional development in Latin America and the Caribbean. It provides loans, grants, guarantees, policy advice and technical assistance to the public and private sectors of its borrowing countries.
- 2.2 The general objective of the Technical Cooperation (TC) project that finances this consultancy is to strengthen the capacity of the University of the West Indies (UWI) St. Augustine, to stimulate tech transfer from the university to the private sector in a way that dynamizes the economy of Trinidad and Tobago. The specific objective is to support the UWI to produce and broker research, development and innovation outputs that are utilized and scaled up by private counterparts.

2. Objective

- 2.1. The objective of this consultancy is to evaluate the extent to which the objectives of the technical cooperation project were fulfilled, and identify lessons learned that can be used in other tech transfer projects.

3. Scope of Consultancy

- 3.1. The consultancy will meet with and interview stakeholders, and review project deliverables to: (i) determine the extent to which the project has fulfilled, or is expected to fulfill the specific objective of strengthening the UWI St. Augustine's campus for conducting tech transfer; (ii) assess the extent to which the project met the performance targets and results as established in the Project's Results Framework; (iii) assess the extent to which the UWI Tech Transfer activities may be financially sustainable and the results of the project will be sustained after the project ends; (iv) identify any lessons learned that could be applied to strengthening of tech transfer services in the Caribbean.

4. Key Activities

4.1. Inception Meeting with Stakeholders:

- The consultant(s) will participate in a preliminary meeting with the UWI tech transfer team and IDB project team members to discuss the evaluation's objectives, obtain context about the project, clarify timelines, and any other issues that are expected to arise during the consultancy.

4.2. Desk review

- The consultant will review consultancy deliverables to establish to what extent outputs and outcomes were met, challenges and difficulties encountered, future opportunities, and lessons learned, which may serve UWI and other tech transfer initiatives in the Caribbean.

⁸ CO-T1475

4.3. Stakeholder interviews

- The consultant will meet and interview, at a minimum: the UWI tech transfer team, a representative sample of problem owners, a representative sample of solutions providers, and potentially, the consultants involved in providing tech transfer and intellectual property advisory services, to identify the extent to which the project's outputs and outcomes were met, and any learnings from the processes and methodologies supported by this project.

5. Expected Outcome and Deliverables

5.1. Reports: The consultant will produce the following reports to document the progress of the consultancy:

- 1) Draft evaluation;
- 2) Final evaluation report.

6. Project Schedule and Milestones

6.1. The project is expected to begin in January 2025 and to be completed by mid 2025. The schedule will be defined by the firm in agreement with the UWI tech transfer and IDB project teams.

7. Reporting Requirements

7.1. Every report must be submitted via an electronic file for review.

7.2. All deliverables must be in English.

8. Acceptance Criteria

8.1. All deliverables will be reviewed by the IDB and UWI project teams. Comments will be provided by written email. The consultant/firm is expected to provide written feedback on how comments were addressed. Payments will be made upon final reports (that is, reports that were reviewed and commented by the IDB and UWI project teams, and that the consultants have addressed to both project teams' satisfaction).

9. Supervision and Reporting

9.1. The consultancy will be formally reporting to Sylvia Eva Dohnert de Lascurain, Private Sector Lead Specialist, Inter-American Development Bank.

9.2. The Consultancy will be expected to work closely with the University of the West Indies' St. Augustine Center for Entrepreneurship and Innovation.

10. Schedule of Payments

10.1. Payment terms will be based on project milestones or deliverables. The Bank does not expect to make advance payments under consulting contracts unless a significant amount of

travel is required. The Bank wishes to receive the most competitive cost proposal for the services described herein.

- 10.2.** The IDB Official Exchange Rate indicated in the RFP will be applied for necessary conversions of local currency payments.

Payment Schedule	
<i>Deliverable</i>	%
1. Deliverable 1: Draft evaluation report	35%
2. Deliverable 2: Final evaluation report	65%
TOTAL	100%

11. Qualifications to Utilize in Criteria for Selection:

11.1. Qualifications of Team Members:

- This consultancy requires the services of an individual consultant with experience in technology transfer activities, intellectual property licenses, technology scouting, intellectual property rights protection, business negotiations, and patenting.
- The Consultant should possess a master's degree in international development, Business, Innovation, Law, Social Entrepreneurship or a related field. At least 5 years' experience in technology development related fields and intellectual property arrangements is sought.
- Fluency in oral and written English.

Core and Technical Competencies:

- Familiarity with best practices in the design of open innovation processes related to technology transfer activities.
- Highly developed communication and writing skills as evidenced by presentations and publicly available reports, blogs, articles, and/or academic pieces.
- Strong inter-personal relations skills. Pro-active in seeking information, managing relationships with stakeholders, including building trust and promoting partnership.
- Ability to manage client expectations, negotiate around project execution challenges, and identify possible solutions.
- A working understanding of guidelines and procedures typically used by development banks.
- The ability to work independently and manage multiple tasks effectively. Excellent written and oral communication skills are required, including the ability to synthesize key issues and draw lessons learned.

TERMS OF REFERENCE

Title of this consultancy: Support Development of Tracking System

Financed by Technical Cooperation: TT-T1138 – Driving Economic Dynamism through Tech Transfer in Trinidad and Tobago

1. Background and Justification

- 2.1 Globally, universities are playing an increasing role in innovation, as companies choose to license research from universities rather than carrying out their own¹. A sophisticated entrepreneurship and innovation eco-system requires mechanisms to encourage knowledge generation and diffusion. Trinidad and Tobago scores very low (104th out of 132 countries) in terms of Innovation linkages, specifically university-industry R&D collaboration (107th), although its QS University ranking is decent (72nd out of 132 countries), many new businesses are created relative to the population (32nd), it has a relatively high proportion of high tech exports as a % of total trade (62nd), a high proportion of PCT patents (74th), and a relatively high degree of production and export complexity (51st in the world)².
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2. Objective

- 2.1. The objective of this consultancy is to support the development of an information system, which will help the UWI tech transfer team manage the tech transfer process.

3. Scope of Consultancy

- 3.1. The consultant will work with the UWI tech team to develop an information system that can manage UWI's tech transfer process, including: (i) capture relevant data of potential clients for UWI's tech transfer services (these refer to private sector actors that have put forth a technology problem that requires a complex, innovative solution), and of their proposed technology problems; (ii) capture relevant data of potential solutions' providers (these refer to businesses, the university itself, and other actors that have presented a proposal to solve a specific technology problem), and their potential solutions; (iii) be able to track, utilizing the platform, any potential matches made between technology problem owners and their solutions providers, as well as the formal and informal arrangements that they have undertaken, and progress on the joint R&D work. The platform could have additional capabilities, as required by the UWI tech transfer team, such as artificial intelligence elements that help with search and navigation, or that suggest matches between technology problem owners and their suppliers.

4. Key Activities

4.1. Inception Meeting with Stakeholders:

- The consultant(s) will participate in a preliminary meeting with the UWI tech transfer team and IDB project team members to discuss the evaluation's objectives, obtain context about the project, clarify timelines, and any other issues that are expected to arise during the consultancy.

⁸ CO-T1475

4.2. Desk review and informed technical design

- The consultant will review the technical design of the Tracking System that was developed by the consulting firm to advise UWI on the tech transfer methodology. He/she will also review proposals put forth by problem proponents and solutions providers, and the templates being utilized to formalize validation and R&D agreements between the parties.
- Based on the review of these documents, the consultant will prepare, for the review of the UWI tech transfer team, a visual design of the information system, including forms to capture information, how the information will be processed and stored, where at UWI it will be housed, and technical specifications.

4.3. Development of the information system

- Once the consultant has obtained the consent of the UWI tech transfer team and the IDB project team, the consultant will develop and test the information system. The expected product is a fully working tracking system.

5. Expected Outcome and Deliverables

5.1. Reports: The consultant will produce the following reports to document the progress of the consultancy:

- 1) Visual design of the information system and technical specifications
- 2) Final code of the working information system (to be verified by UWI and the IDB).

6. Project Schedule and Milestones

6.1. The project is expected to begin in January 2024 and to be completed by mid 2024. The schedule will be defined by the firm in agreement with the UWI tech transfer and IDB project teams.

7. Reporting Requirements

7.1. Every report must be submitted via an electronic file for review.

7.2. All deliverables must be in English.

8. Acceptance Criteria

8.1. All deliverables will be reviewed by the IDB and UWI project teams. Comments will be provided by written email. The consultant/firm is expected to provide written feedback on how comments were addressed. Payments will be made upon final reports (that is, reports that were reviewed and commented by the IDB and UWI project teams, and that the consultants have addressed to both project teams' satisfaction).

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Sector Lead Specialist, Inter-American Development Bank.

- 9.2.** The Consultancy will be expected to work closely with the University of the West Indies' St. Augustine Center for Entrepreneurship and Innovation.

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- 10.1.** Payment terms will be based on project milestones or deliverables. The Bank does not expect to make advance payments under consulting contracts unless a significant amount of travel is required. The Bank wishes to receive the most competitive cost proposal for the services described herein.
- 10.2.** The IDB Official Exchange Rate indicated in the RFP will be applied for necessary conversions of local currency payments.

Payment Schedule	
<i>Deliverable</i>	%
1. Deliverable 1: Visual design of the information system and technical specifications	35%
2. Deliverable 2: Final code and proof of work of information system	65%
TOTAL	100%

11. Qualifications to Utilize in Criteria for Selection:

11.1. Qualifications of Team Members:

- This consultancy requires the services of an individual consultant with experience in informations' systems and full stack software development.
- The Consultant should possess an undergraduate degree in Computer Sciences, Software Engineering, Systems Engineering, or equivalent subject.
- Fluency in oral and written English.

Core and Technical Competencies:

- Familiarity with information technology platforms.
- Highly developed communication and writing skills as evidenced by presentations and publicly available reports, blogs, articles, and/or academic pieces.
- Strong inter-personal relations skills. Pro-active in seeking information, managing relationships with stakeholders, including building trust and promoting partnership.
- Ability to manage client expectations, negotiate around project execution challenges, and identify possible solutions.
- A working understanding of guidelines and procedures typically used by development banks.
- The ability to work independently and manage multiple tasks effectively. Excellent written and oral communication skills are required, including the ability to synthesize key issues and

draw lessons learned.

TERMS OF REFERENCE

Title of this consultancy: Development of an investment valuation model for UVL

**Financed by Technical Cooperation: TT-T1138 – Driving Economic Dynamism
through Tech Transfer in Trinidad and Tobago**

1. Background and Justification

- 2.1 Globally, universities are playing an increasing role in innovation, as companies choose to license research from universities rather than carrying out their own¹. A sophisticated entrepreneurship and innovation eco-system requires mechanisms to encourage knowledge generation and diffusion. Trinidad and Tobago scores very low (104th out of 132 countries) in terms of Innovation linkages, specifically university-industry R&D collaboration (107th), although its QS University ranking is decent (72nd out of 132 countries), many new businesses are created relative to the population (32nd), it has a relatively high proportion of high tech exports as a % of total trade (62nd), a high proportion of PCT patents (74th), and a relatively high degree of production and export complexity (51st in the world)².
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2. Objective

2.1. The objective of this consultancy is to provide an investment valuation model to the Board and Management of UWI Ventures' Limited (UVL) that can clarify the starting point of equity and venture capital investment negotiations with Caribbean businesses.

3. Scope of Consultancy

- 3.1. The consultancy will develop the investment valuation model considering the following considerations:
 - Business valuation methods used in developed markets (market capitalization, times revenue method, earnings multiplier, discounted cash flow, book value, and liquidation value), and the circumstances in which each business valuation method is most appropriate;
 - The applicability of business valuation methods to the Caribbean context (given existing data, size and sector of firm, and/or other characteristics);
 - A suggestion of how to combine business valuation methods to arrive to a final value conclusion (recommendations may vary by industry, size of firm, or stage in the lifecycle)
 - Normalizing adjustments to be considered in valuing the business;
 - Guidelines to assess company risk – to be used in discounting valuations.
- 3.2. The consultancy will present to the Board and Management team of UVL the investment valuation model proposed, for comments.
- 3.3. The consultant will train 5 valuers in the application of the business valuation model, as well as any businesses that at the moment are being considered as investees by UVL.

4. Key Activities

- 4.1. **Inception Meeting with Stakeholders and Desk Review:**

⁸ CO-T1475

- The consultant(s) will participate in a preliminary meeting with the UWI tech transfer team and IDB project team members to discuss the project's objectives and the consultancy's objectives, the open innovation approach expected of the consultancy, expected outputs and outcomes of the consultancy, the time that the consultant will spend in Trinidad and Tobago supporting the UWI tech transfer team, and any other issues related to the execution of the consultancy.

4.2. Draft report of a recommended investment valuation model for UVL

- The draft report should explain the 6 methods of business valuation, their applicability to Caribbean companies that are of interest or could be of interest to UVL, and recommend a step by step guide to developing an investment valuation model of a Caribbean business. The model should specify which valuation models are better for which types of Caribbean businesses, how to combine them, how to calculate risk, and how to propose a fair valuation for a potential investee.

4.3. Training materials for valuers and businesses to be valued

- The consultant will produce training materials (presentations, videos, and other interactive material, embedded in a self-paced, training website housed at UWI or UVL) to easily and clearly transmit to potential valuers and UVL investees the concepts behind the UVL investment valuation model. Utilizing the training materials, the consultant will train at least 5 valuers and any potential UVL investees in the application of the investment valuation model.

5. Expected Outcome and Deliverables

- 5.1. Reports:** The consultant will produce the following reports to document the progress of the consultancy:
- 1) Draft report of recommended investment valuation model for UVL
 - 2) Training materials for valuers and businesses to be valued
 - 3) Report describing training provided to valuers and potential investees, and lessons learned
 - 4) Final investment valuation model for UVL, and training materials

6. Project Schedule and Milestones

- 6.1.** The project is expected to begin in September 2023 and to be completed by March 2024. The schedule will be defined by the consultant in agreement with the UVL and IDB project teams. The consultant is expected to spend sufficient time in Trinidad and Tobago to: 1) present the model to UVL Board and Management; 2) train the valuers and potential investees.

7. Reporting Requirements

- 7.1.** Every report must be submitted via an electronic file for review.
- 7.2.** All deliverables must be in English.

8. Acceptance Criteria

8.1. All deliverables will be reviewed by the IDB and UWI/UVL project teams. Comments will be provided by written email. The consultant/firm is expected to provide written feedback on how comments were addressed. Payments will be made upon final reports (that is, reports that were reviewed and commented by the IDB and UWI project teams, and that the consultants have addressed to both project teams' satisfaction).

9. Supervision and Reporting

9.1. The consultancy will be formally reporting to Sylvia Eva Dohnert de Lascurain, Private Sector Lead Specialist, Inter-American Development Bank.

9.2. The Consultancy will be expected to work closely with the University of the West Indies' St. Augustine Center for Entrepreneurship and Innovation.

10. Schedule of Payments

10.1. Payment terms will be based on project milestones or deliverables. The Bank does not expect to make advance payments under consulting contracts unless a significant amount of travel is required. The Bank wishes to receive the most competitive cost proposal for the services described herein.

10.2. The IDB Official Exchange Rate indicated in the RFP will be applied for necessary conversions of local currency payments.

Payment Schedule	
<i>Deliverable</i>	%
1. Deliverable 1: Draft Investment Valuation Model	20%
2. Deliverable 2: Training materials	20%
3. Deliverable 3: Report describing training delivered to valuers, and lessons learned	20%
4. Deliverable 4: Final Investment Valuation Model and training materials	40%
TOTAL	100%

11. Qualifications to Utilize in Criteria for Selection:

11.1. **Qualifications of Team Members:**

- This consultancy requires the services of a consultant/consulting firm with experience in valuing businesses, and with knowledge of the Caribbean region.
- The Lead Consultant should possess a Master's degree in Business, Accounting, Finance, or a related field. At least 5 years' experience in business valuation and investment negotiations is sought.

- Fluency in oral and written English.

Core and Technical Competencies:

- Familiarity with best practices in valuating businesses
- Highly developed communication and writing skills as evidenced by presentations and publicly available reports, blogs, articles, and/or academic pieces.
- Strong inter-personal relations skills. Pro-active in seeking information, managing relationships with stakeholders, including building trust and promoting partnership.
- Ability to manage client expectations, negotiate around project execution challenges, and identify possible solutions.
- A working understanding of guidelines and procedures typically used by development banks.
- The ability to work independently and manage multiple tasks effectively. Excellent written and oral communication skills are required, including the ability to synthesize key issues and draw lessons learned.