

Technical Proposal - Extension

Creating a business matchmaking platform for the Ministry of Industry, Science, Technology and Innovation (MISTI) of Cambodia.

Prepared for:

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1 Introduction

Pegotec at a glance

Pegotec is a European-managed innovative IT development company based in Singapore. It offers a broad range of web and mobile app services with an international team of passionate designers, developers, and online marketers. We provide tailored, made services for each client. We define your needs and understand your target audience to deliver benefits that will give your project the success it deserves. Our main field of work is finding web-based solutions to unique problems using the latest technology combined with mobile applications, including tablets and smartphones.

We have more than ten years of experience in web development and mobile app programming.

Pegotec emphasizes the skills, requirements, and ethics of its staff and the client's satisfaction with the quality, functionality, timely delivery, and transparency of our work. A crucial working practice of Pegotec is rejecting any manifestation of corruption and piracy.

Backed up by a team of experienced developers, we plan, implement, and maintain IT solutions. We provide support throughout the whole project cycle. We can successfully implement projects worldwide with our characteristic careful planning and management. We bring the advantages of Asia and Europe together.

Year of incorporation

Singapore incorporation 2017 – Present. Pegotec is legally registered in Singapore. Please find the business registration attached.

Representatives in:

- Singapore
- Phnom Penh, Cambodia
- Manila, Philippines
- Kathmandu, Nepal
- Colombo, Sri Lanka

The Pegotec team

We are a company composed of hardworking young people from different countries and nationalities. They all have various technical backgrounds and a high commitment, sharing awesome ideas and dedicating all the time necessary to fulfill any duty.

Pegotec team members are creative thinkers who use up-to-date technology, apply all their knowledge and ethical responsibility, fulfill tasks, and create trustworthy relationships with clients.

2 Interpretation of objectives (5%)

The Ministry of Industry, Science, Technology, and Innovation (MISTI) of Cambodia, supported by GIZ, is strengthening national SME platforms. Therefore, we understand a business matchmaking platform must be created.

Pegotec can help to create a modern, innovative, and sustainable platform to fulfill the needs of this project. Pegotec believes that we can apply our professional know-how and working experience in creating a business matchmaking platform for the Ministry of Industry. With the knowledge to work in Cambodia with the Government and Organizations, Pegotec has workflows to plan, and execute web-based projects of this kind.

We understand that the platform needs to be highly customized and a perfect fit for Cambodian SMEs

With close collaboration with GIZ and MISTI, the business matchmaking platform will become a critical success factor for building a future-proof solution meeting all requirements mentioned in the ToR in budget and time.

3 Strategy (5%)

This assignment's main objective is to create a platform that can match Cambodian SMEs and help them to improve. We believe that technology and software should never have an end in themselves but that it is meant to serve and support people with a specific purpose. Keeping this in mind, our consultants and backstopping team are highly motivated to bring in all available experience and skills to ensure the development of a state-of-the-art concept, lean yet effective communication and collaboration, project steering, and reporting. Our implementation approach for this assignment will be driven by agile methodology, considering the Principles for Digital Development, which GIZ and Pegotec have officially endorsed.

3.1 Agile implementation approach that adapts to project and partner needs

We understand that there is a need for a matchmaking platform in Cambodia for SMEs. Consequently, we will ensure that our consultancy is fully aligned with this operational reality through our strategic pillar: a flexible, agile implementation approach that adapts to project and partner needs. Agile implementation describes an iterative approach to conducting and delivering this assignment throughout its lifecycle. This means we will conduct our consultancy in several iterations or incremental steps rather than planning everything in detail upfront. There are two main advantages to an agile approach: firstly, it allows us to flexibly adjust and adapt as we go along instead of following a strictly linear process; and secondly, it enables us to deliver outputs continuously throughout the process instead of only at the end of the assignment. Moreover, agile project implementation builds on trust, flexibility, and collaboration values. We consider these to be crucial aspects for successfully conducting this consultancy.

This approach has proven very efficient and effective during our previous assignments in developing software. It advocates adaptive planning, evolutionary development, early delivery, and continuous improvement and encourages rapid and flexible responses to change.

- The basic idea of agile software development is to develop software in several iterations.
- After each iteration (so-called "Sprint"; typically, two weeks), a software product is ready, and the project team can test and review the implemented features.
- After each Sprint, planning for the following iteration takes place, allowing for re-ordering priorities and refining requirements.
- Permanent feedback loops and testing of prototype versions ensure a user-centered development considering the needs of the target groups.

Compared to typical project management approaches (such as waterfall), this allows for close cooperation between developers and project stakeholders. From the very beginning, the GIZ and MISTI teams will be able to test and review the evolving IT system.

3.2 Functional requirements

The main task for this assignment is to design and develop a business matchmaking platform for Cambodia. This assignment requires performing different activities.

Design and Develop UX/UI

A draft design will be submitted for review and discussion in the first design stage. The design will be developed in detail for the application.

To ensure the best user experience, the design will focus on the following:

- High contrasted design
- Size of element for easy navigation
- Clean, modern, and professional look
- Use of free and open-source fonts
- Use of the device portrait mode (*landscape will not be supported*)
- Material design will be used
- The design is easily scalable and can be implemented in smaller/bigger screen sizes of tablets and smartphones devices.

We propose a user interface (UI) with a simple menu that will give access to the main functionalities. All sub-screens should have a back button to ensure the user can go backward.

The proposed design will include structure management, content management, and sector-specific information.

An Adobe XD design will showcase all functionality and give all stakeholders an idea of how the application will work.

Pegotec will prepare a conceptual design for desktop and mobile versions (responsive web design). The design will be attractive, straightforward, and easy to use/navigate.

Logo Design

A KhmerSME MATCH logo will be developed closely with the client. The logo will be developed by a highly skilled designer with years of experience in Website and CI (corporate identity) design. Information from the meetings will create an attractive and appealing log for the website.

The logo will be delivered in print quality as Web- and Vector Version. All usage rights of using the logo will be transferred to the client for unlimited and free use for every purpose.

Concept

The Match Platform should be innovative and sustainable, enabling users to network online and connect. It should have innovative features that improve the situation of SMEs in Cambodia.

Users need to register themselves and their businesses on the platform. This data will match them to other relevant people or companies. There would be different ways of doing this:

1. Matching people by industry

2. Matching people by position/job role
3. Matching by interests

The user account needs to be detailed to get good results in matchmaking. For that, we recommend the following attributes:

- Company (connected to a company profile)
- Job position/role
- Interest (Selected from a list)
- Age
- Former jobs/companies
- Place of living
- Place of working
- Education

Using all these attributes, an algorithm can recommend people and businesses to each other. Recommended people can be followed.

Another feature would be to post company projects and events to the platform. This would enable the users to update their followers and inform them about their current work.

Platform users can post products and services offered to the community.

Another exciting feature could be meeting requests and event invitations for connected users.

This would allow the SME community to promote their businesses and help them grow their sales.

3.3 Features

Homepage

All information about the platform, the latest news, and general information will be displayed here. A welcome message should be included as well.

User Registration

Users need to be able to register for the functionality of the platform. A registration process with all the necessary information, such as Username, E-Mail, and Password, must be created.

Registration with Apple, Google, or Microsoft should be possible.

User Profile

Users can add relevant information to their profile:

- Company (connected to a company profile)
- Job position/role

- Interest (Selected from a list)
- Age
- Former jobs/companies
- Place of living
- Place of working
- Education
- Profile picture
- LinkedIn Link
- Facebook Link

Business Profile

Users can add relevant information to their business profile:

- Business Name
- Industry
- Services
- Products
- Location
- Number of Employees
- Needs and challenges of the business
- Description
- Company Logo
- LinkedIn Profile Link
- Facebook Profile link

User Login

A dedicated login page for the users of the new portal is required. Only registered users for this functionality will be allowed to log in there.

User Dashboard

All functionality will be displayed on this page to make it easy to access. A menu will be created with links to the main page, the events page, participants, the marketplace, and the agenda.

Most important information will be displayed, such as upcoming events, meetings, requests, and new members.

Recommended connections will be displayed here as well.

All meeting requests will be displayed here.

All relevant features will be displayed here to give the user an overview.

User connection recommendation

Users can see who is recommended to them to connect. The user can decide to contact them via the platform or send a meeting request.

Pending requests will be displayed there.

Existing connections can be viewed and terminated.

Meeting Schedule

Users can set meetings with other users and recommend a date and time. A meeting link to a video platform like Zoom or Teams can be integrated here.

User Events Overview Page

All published events from the past and the future will be displayed in this section. All preliminary information will be displayed, such as an image, the headline, the event date, the location, and a short description. Events can be sorted by the date of the events and their details.

Users can create events or participate in events.

User Events Detail Page

This page will contain all entered data of the event, such as:

- Name of the event
- Organizer
- Date of the event
- Location of the event
- Images
- Detailed description
- Program
- Sponsors information

There will be a link to add the event to the user's calendar as outlook or google calendar. The user can also choose to attend the event.

A list of attendees of the selected will be displayed.

Participants Overview Page

All registered users of the system will be displayed on this page. Users can be filtered by their Industry, Position, and job role. Furthermore, they can be ordered by alphabet or searched.

This will allow matching industries or typical roles.

The users will be displayed with their name, Company name, job title, and profile picture.

All users have a link to see their detail pages.

Participants Detail Page

The participant's detail page will contain all personal information like:

- Profile Picture
- Name
- Company
- Job Position
- Country
- Job Position
- Job Role
- LinkedIn Profile Link

Marketplace Overview Page

All opportunities (products or services) entered into the system will be displayed on this page. Users can filter options by whether they are linked to an event. Furthermore, they can be ordered by alphabet or searched.

The opportunities will be displayed with their name, the creator's name, their short description, and a picture.

All opportunities have a link to see their detail pages.

Marketplace Detail Page

The marketplace detail page will contain all opportunity information like:

- Pictures
- Title
- Video Link
- Link to additional content
- Creator (linked to the user)
- Description
- Industry

Marketplace Own Opportunities Page

Overview of all created opportunities. The opportunities will be displayed with their name, the creator's name, their short description, and a picture.

Marketplace Own Opportunities Page

To add new opportunities, the following details can be entered:

- Linked Event
- Name
- Description
- Video Link
- Link to additional content
- Pictures
- Advantages of the opportunity
- Industry

Calendar

Calendar views with filters for relevant activities and matchmaking events (including Images)

Search

Users can search for other users and industries. Also, products and services can be searched for.

The search is one of the essential features and offers excellent value to users to find interesting business people.

Participate page

Participants can create their profile, job, and company highlight.

SEO

The website will include basic SEO (Search Engine Optimization). This includes that all Titles are fields with relevant Page names (usually the headlines of a page), and the HTML structure will be SEO optimized. An SEO sitemap will be created and submitted to google. The page will be added to the Google Index and monitored with SEO tools (e.g., Webmaster Tools).

Analytics

Pegotec suggests integrating the free analytics platform Google Analytics to see trends in website traffic. This is an easy-to-understand tool for reporting purposes on website traffic and origin.

Migration / Import of third-party user accounts

Pegotec can provide a template in a digital form in what way other user accounts, profiles, or information can be imported into the new system. The third-party provider, like, i.e., ISC website, MIH website, other relevant ministries, etc., must provide the data in the template format. Pegotec can support this process of receiving the data correctly.

Security Features

Pegotec will provide an advanced security system to notify website admins/editors in case of unauthorized access to the KhmerSME MATCH (viruses, hacking, etc.) on the hosting level.

Content Management System (CMS)

Pegotec will develop the back office and Content Management System (CMS) that allows web admins and/or editors to add or edit content easily.

3.4 Multimedia Videos

Pegotec will provide multimedia videos with infographic presentations to introduce the developed platform.

3.5 Non-functional requirements

Search Engine Optimization (SEO)

The Website will include basic SEO (Search Engine Optimization). An SEO sitemap will be created and submitted to Google. This approach consists of meta tags like titles and an SEO-optimized HTML structure.

The Website will be injected into the google index and searchable. Using an automatically generated XML sitemaps guarantees that Google will ultimately capture the Website's content.

Quality assurance

Our app development services include complete QA on multiple devices and environments. We conduct extensive mobile app testing throughout the entire development cycle, including manual testing, visual QA, and automated testing, to ensure that your application functions ideally and delights users. Our approach typically includes the following aspects:

- Manual testing by in-house test engineers
- Full visual QA
- QA consulting
- The integrated testing process spans the complete development cycle

Our agile process allows us to test, locate, and fix issues throughout the project lifecycle. Using a combination of manual and automated testing, we thoroughly test all use cases, problematic edge cases, and all visual and functional aspects.

Testing

Pegotec will conduct a pilot of the mobile application development process for beta testing in an early stage of the development to test the application on different devices. Bug tracking will be done with special software monitoring the App in the beta phase.

Pegotec will prepare a version of the application for end-users and involve them in the process of testing and collecting feedback. Feedback will be collected in a supplied software or via e-mail.

3.6 Support, maintenance, and hosting

Pegotec offers service level agreements, hosting plans, and further development agreements.

The project needs to be hosted on a sufficient server, monitored, and serviced. For that, Pegotec is offering to provide webspace and services for it. The server will be under European GDPR law compliant and protected.

Pegotec is offering free hosting and maintenance between January to December 2023.

Server Hosting & Backups

Webhosting with:

- Virtual Server
- 6 GB RAM
- 4 CPU Cores
- 100 GB SSD disk space
- Guarantee a peak bandwidth of 100 Mbit/s
- Unlimited traffic volume
- High bandwidth
- Firewall for the webspace
- Security of the hosting
- Daily backups of the database and files for easy restoration of data lost in case of fatal lost files caused by server errors or hacks
- Daily backups will be available for 14 days
- Weekly backups (Monday morning) will be available for six weeks
- Monthly backups (1. day of the month) will be available to restore for one year

The server is a virtual server that can be scaled up accordingly. If the application gets rolled out and used in more countries, an upgrade will be required. The usage of the initial project can estimate this.

The hosting does not include an email server.

A domain needs to be provided from the clients.

Maintenance and support

Pegotec is also offering maintenance solutions for the project.

Maintenance can include

- Software maintenance if required
- Mobile app maintenance if required
- Management of dependencies maintenance if required
- Frequent security checks
- Software performance monitoring
- Constant Malware scans
- Chat support via Microsoft Teams or other messenger platforms

The scope will be defined with the client in a separate Service Level Agreement (SLA).

The first 12 months of hosting and maintenance of the project will be offered from Pegotec for free. Pegotec offers a competitive price for these services for the succeeding years, stated in the financial proposal.

4 Implementation methods: Management of processes, Cooperation, Steering structure, Learning, and Innovation (5%)

Approach and procedure for steering the measures with the project partners

Pegotec considers a clearly expressed and commonly accepted steering structure as essential for creating effective decision-making processes regarding the assignment's strategy and planning, coordination, and control, as well as its monitoring and management of resources. The aim is to ensure that all relevant actors within the assignment collaborate efficiently toward achieving its objectives.

Agile development teams deliver software products iteratively and incrementally, maximizing opportunities for feedback. To implement this approach, the following roles and responsibilities need to be defined and allocated to team members:

Roles	Tasks	Suggested team member
Project Manager (Scrum Master)	- Steering project (scope, quality, budget) - Facilitating the agile process - Organizing meetings - Clearing impediments	Team Leader: Pedro Gorriñ Diaz
Product Owner	- Representing target users - Responsibility for the scope and priority of requirements - Continuous feedback into the development process - Approval of deliverables	GIZ: TBD MISTI: TBD Supported by business analysts
Development team	- Creating deliverables - Estimating efforts - Understanding requirements	Business Analyst Solutions Architect DevOps Web & Backend Developers
Stakeholders	- Providing requirements and feedback to the Product Owner - Involvement in review and planning meetings	IDPoor team MISTI

Contribution to results monitoring and the associated challenges

Pegotec will be meeting in English in the project's first phase to revise the analysis and validate the functionalities with all relevant stakeholders. Pegotec will structure the meetings with all the required stakeholders and involved parties. Pegotec is experienced in organizing meetings successfully to

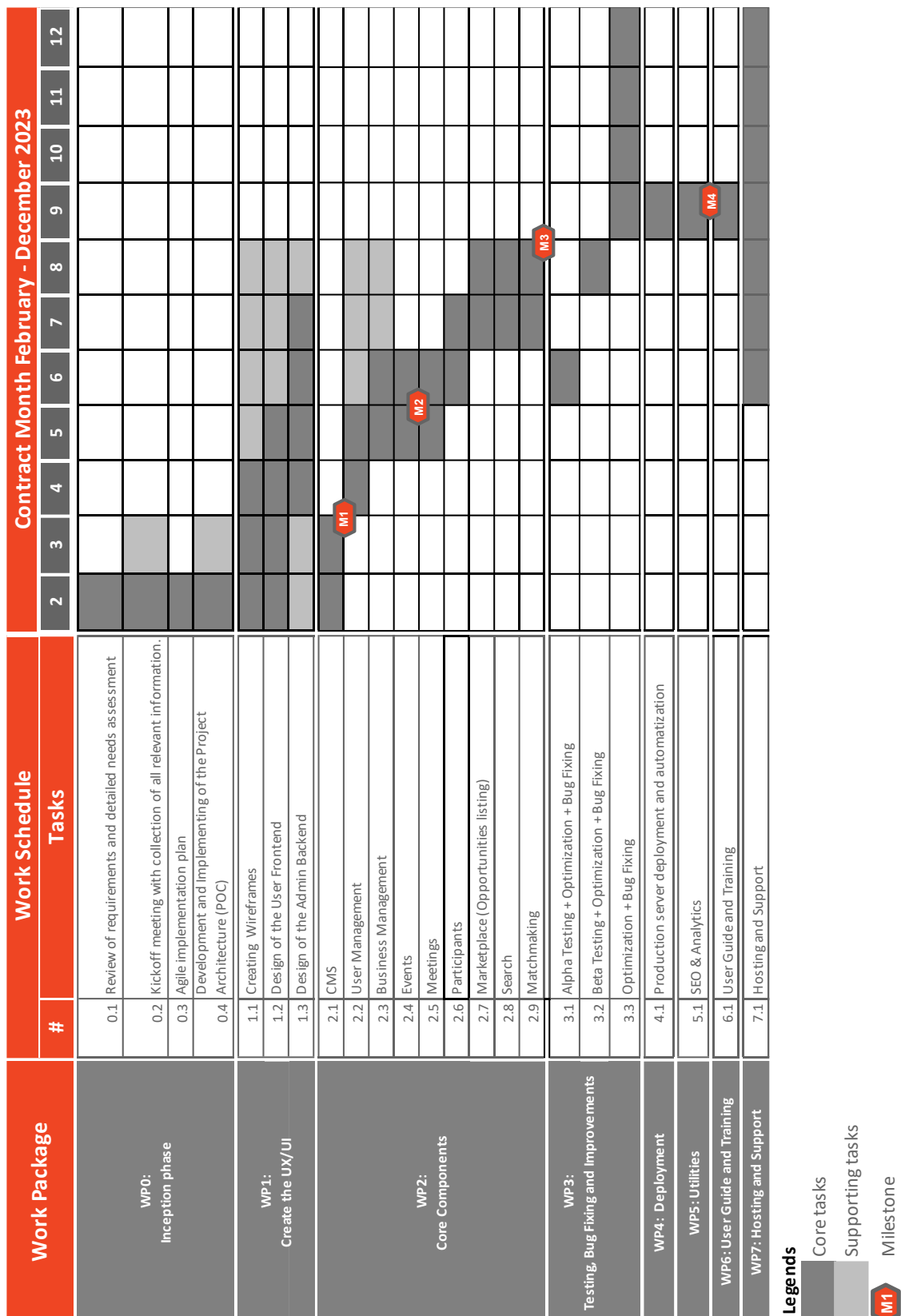
ensure the project's success. All relevant aspects of the projects will be discussed and documented. The meetings can be conducted online via Microsoft Teams or other online platforms.

This phase will define a clear structure and functionalities of the application. It will consider the opinions after consultations with relevant stakeholders to clearly understand the stakeholders' expectations. The scoping exercise will identify the features and functions of the application, the types of data to be included, how information should be included and accessed, and data visualization.

A work plan will be finalized, and all stakeholders need to agree on the project's proposed timeline. Pegotec will submit the specified deliverables to the stakeholders for comments and approvals.

5 Work schedule and time schedule (5%)

Following our work plan, we have developed a timeline for the completion of the project as follows:



5.1 Project Extension

To accommodate GIZ and MISTI need for additional time to complete the project and deliver the content, Pegotec recommends extending the timeline from September 30, 2023, to December 31, 2023. This extension will allow stakeholders to improve the project's output and adequately prepare for training. Regarding the financial aspect, Pegotec suggests utilizing the flexible remuneration allocated plus a proposed additional budget for the project to cover the costs associated with the extended support services and the additional efforts required. This approach ensures a seamless project continuation without incurring additional expenses.

6 Monitoring and evaluation concept (5%)

Organizations should develop plans for addressing both information management (IM) and knowledge management (KM) requirements, especially since the information is growing at an alarming rate.

Information access is the element that links IM and KM. Ideally, addressing IM issues, processes and systems should be done in parallel with KM. Knowledge management requires information access to be implemented as well.

Providing people access to information and the knowledge of others will then improve decisions and work processes, enhance learning, and, generally, encourage people to become more creative and innovative.

Results-based monitoring (RBM) aims to show the project management where the project stands at any point in time and whether it is on track towards the achievement of intended goals, enabling the AV to make evidence-based decisions and hence increase the effectiveness of the intervention.

The software system automatically contributes to the achievement of the third indicator after completing this assignment. The software's user management and analytics module also support monitoring the other two indicators, as user data can be extracted from the database to contact organizations and individuals for further information on the purpose of data and satisfaction with the availability, quality, and timeliness of data.

7 Staff and backstopping conception

Expert 1



Pedro Gorrin Diaz (Pegotec –Team Leader)

Pedro Gorrin Diaz is a young entrepreneur and founder of Pegotec. A designer and web & mobile developer with excellent and vast experience managing products and teams. A problem-solver who truly enjoys cooperation for better and faster solutions started his career by working at the Ministry CITMA to manage and develop the national intranet. He has worked as a business analyst and project manager on international projects for the past five years. In the past five years, he worked on international projects as a business analyst and project manager for

Pegotec (CO-Founder and CTO). He mainly supported projects in Cambodia.

As one of the founders of Pegotec, Pedro is responsible for the agile implementation of several GIZ projects' digital monitoring and information management. Pedro was the business analyst and project manager of the new IDPoor software system development and is familiar with IDPoor processes and all relevant stakeholders.

Pedro Gorrin Diaz	
Role	Team Leader
Education/training: (2.1.1): University qualification (Bachelor/Master) in Information Technology, Economics, Social Sciences, or similar	✓Diploma in Computer Science Engineering
Language (2.1.2): Knowledge of English, C1 in the Common European Framework of Reference for Languages	✓English: C1 ✓Spanish: Mother Tongue
General professional experience (2.1.3): 7 years of professional experience in the business software development sector, of which 3 years on another continent (international context)	✓19 years
Specific professional experience (2.1.4): 7 years of professional experience in Agile Project Management in a Software Development context	✓7 years
Leadership/management experience (2.1.5): 5 years of management/leadership experience as a project team leader or manager in a company	✓7 years

Regional experience (2.1.6): 4 years of work experience in Asia (region), of which 2 years in Cambodia (country)	✓5 years
Development Cooperation (DC) experience (2.1.7): 4 years of experience working on DC projects	✓7 years
Experience in designing the overall architecture of web applications	✓7 years
Experience in designing and developing Application Programming Interfaces (APIs)	✓7 years
Experience with backend programming languages (i.e., NodeJS, PHP, Python, Ruby, Java, .NET, JavaScript, etc.)	✓7 years

Backstopping strategy

In the current IDPoor system development, Web Essentials and Pegotec formed a team with our partner to implement the backstopping strategy. We will continue the process here in this project. Our backstopping concept is based on four working processes that allow the backstopping team to monitor the implementation of the activities, ensure continuous communication with the project and strictly respect deadlines throughout the entire project implementation. Our backstopping team will be involved throughout the entire project lifecycle to ensure the project and client are supported.

Work Process 1: A simple team with clear roles and responsibilities

The backstopping team will support the nominated experts contractually and technically. Technically, this includes support with project management and IT expertise. Contractually, this includes aid with quality control of all outputs before their delivery to the project.

Work Process 2: Optimize decision-making processes

If any blockage to project activities arises, the backstopping and project team will be involved to enable quick and transparent decision-making. In case of *force majeure* (e.g., illness) preventing any nominated expert from work, the backstopping team will step in and ensure the timely completion of activities.

Work Process 3: Ensuring timely communication

The team will ensure transparent communication and allow for timely information sharing, especially regarding problems and possible corrective measures proposed.

Work Process 4: Quality assurance

Quality assurance is provided by the backstopping project management team and IT experts with GIZ experience who will serve as technical sparring partners for the assignment. The quality check will comprise technical and formal revisions in close communication with the nominated experts.

Our backstopping team

Tobias Rast

Tobias Rast is an entrepreneur and founding member of Pegotec. As the company's CEO, he monitors all the projects and communicates with the clients. With a Diploma in Information Technology, his background is in software development, project management, and business analysis for over 20 years. He has been leading international and regional software development teams for ten years. He has worked in Asian Regions like Cambodia, the Philippines, Nepal, and Singapore since 2009. With his strong knowledge of software, he is one of the company's backbones. He can ensure the quality and sustainability of custom-developed solutions—one of his strong skills is handling extensive databases and their analysis.

8 Knowledge and information management (5%)

All involved actors openly exchange, learn from, and expand knowledge and information.

Technical Documentation

All codes will be documented appropriately for backend and mobile apps along the development process. Detailed technical documentation will be produced along the development process for backend and mobile apps describing:

- System requirement analysis and design
- ER diagram / Workflow
- Data structure
- Data dictionary
- Data flow diagram
- System architecture

User Guide

When the Beta version of the application is delivered, we will start creating the user guide. The User Guide will be prepared in English and will explain the application's functionality.

Launching Event

Pegotec will demonstrate the KhmerSME MATCH features to Cambodian MSMEs as well as relevant stakeholders during the launch events online.

Security Training

A guideline of the security measures and procedures for system of the website will be delivered.

Capacity building

Following the client's requirements on the ToR, a capacity-building process will be organized and executed by Pegotec management, scheduled in the proposed timeline of this technical proposal.

For capacity building, we will prepare the appropriate material for the admin team on how to use and administer the application.

This process will enable trainees to manage the application, acquire the necessary skills, and provide orientations to the administrator on using the application.

The training will be organized online. The training material will consist of a PowerPoint document in English online.

The methodology of the training

The training uses participatory approaches by designing sessions based on the Adult Learning Cycle. In this concept, a learning session starts by allowing participants to establish the learning activity based on their experience. A session would begin with an exercise, a case study, or sharing experiences. Following this, the group is given room for reflection in small groups or plenum. After these steps, theoretical input is shown in lectures or demonstrations before participants can exercise and test the product.

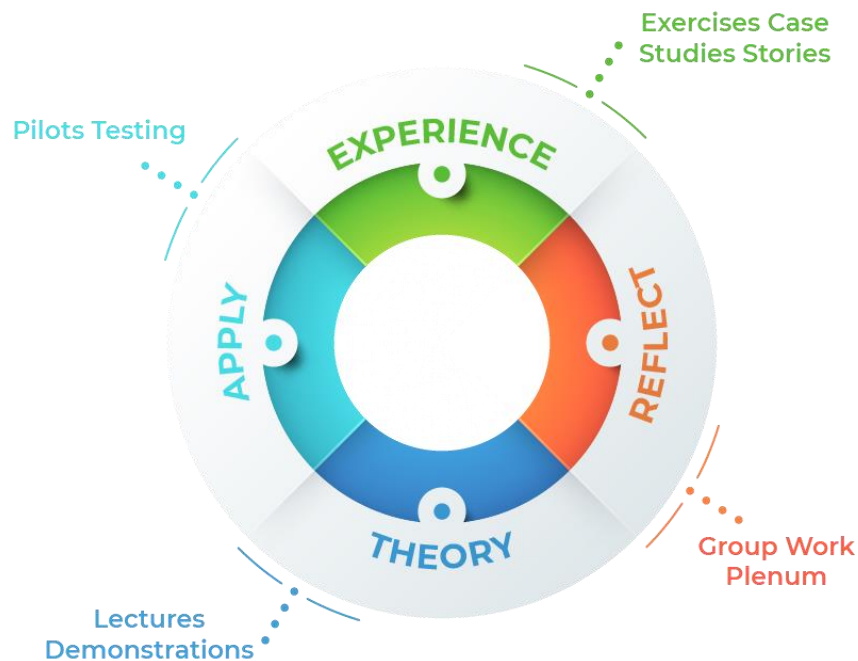


Figure 1: Adult Learning Cycle

Based on the two main aims mentioned above, a training cycle is generally divided into three main topics:

- Understanding processes and knowing how the application is embedded in the process
 - Experience: Card exercise in a group, or by each participant, to order process steps
 - Reflect: Discuss and compare persons or group outcomes
 - Theory: Present the process as defined by the project owner
- Understanding roles and responsibilities
 - Experience: Identify stakeholders involved
 - Reflect: Analyze hierarchy/cooperation relation between stakeholders and app users
 - Theory: Present who is involved and how when using the application
- The functionality of the app use
 - Experience: Give room to "play" with the application after a short introduction based on a case study
 - Reflect: Gather questions about functionality from a case study experience
 - Theory: Demonstrate the application use based on the case study

- Apply: Give further case studies for exercise, solve, and clarify issues

In addition to training courses, teaching resources such as videos or demonstrations might be produced if funding is available. This quote does not include a video or a tour as delivery.

Final Report

Pegotec will report directly to the ASEAN Team Leader Cambodia, and the Senior Advisor of GIZ ASEAN-SME, and will submit results in English on the creation of KhmerSME MATCH for Cambodia no later than 31st December 2023.

Close communication between the GIZ project team, MISTI team, as well as the NFPs and NPs of ASEAN Access and the Pegotec will be provided to ensure that the deliverables fit into the overall concept of GIZ ASEAN SME Project and MISTI which will help to coordinate and backstop the activities in Cambodia.

Duration of the Project

February to December 2023